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The background of the cover is a circular illustration. On the left, a muscular, dark-skinned man (Mach) stands in profile, looking towards the right. Behind him, a woman with long dark hair and a feathered skirt (Bane) is visible. In the lower foreground, a large, scaly, dragon-like creature with a long neck and a small head is shown. The overall style is reminiscent of classic pulp magazine illustrations.

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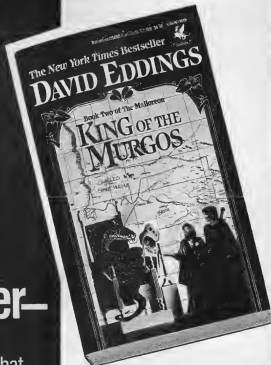


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Rod Garcia is a historian with a Ph. D. from UCLA. He has taught at UCLA and at Villanova, and only in the last couple of years has he started to write SF under the name R. Garcia y Robertson. Mr. Garcia says that his first story for F&SF is a product of time spent studying evolutionary theory and animal mimicry, and also of time spent swimming in the Caribbean. It turns out to be science fiction at its best: fresh, exotic, fast-paced, a most promising and exciting debut.

CAST ON A DISTANT SHORE

By R. Garcia y Robertson

F

Windward Mat

LOATING FACEDOWN IN the blood-warm water, Kafirr watched the sea creature be-

come a carnivore. A heartbeat before, it had been a harmless root scavenger, but now its body sucked in salt water, expanding and elongating. Its tail flattened into a single stiff blade, and its jaws drew back, revealing a predator's evil grin. Dark shadows crept over the creature's upper surfaces, while the belly turned corpse white. This coloring mimicked the two-tone camouflage favored by deepwater hunters. Pseudolimbs beat faster, and the scavenger's tentative movements turned to swift, decisive lunges. Tiny grim teeth prepared to rip apart anything in its path.

The first time Kafirr had seen a copy-fish go through this act, it had scared him right out of the water. He had stayed out for over a hundred hours, and only hunger had driven him back in. Grown children who did

not dive did not eat. Now, after thousands of hours in the water, he found the sudden transformation comforting. Copy-fish were harmless; they mimicked a dozen different carnivores to disguise themselves and scare off smaller predators. By keeping watch on the copy-fish, Kafirr could tell what real predators were hunting through the root grottoes. Neither the copy-fish nor the carnivores it mimicked were true fishes. They were crafty, warm-blooded sea creatures, swimming with the aid of paddle-like pseudolimbs. Kafirr did not know the names he used were wrong; he was not an ichthyologist, just a child of earth cast on a distant shore, using the words of a world that he had never seen.

Every odor, every vibration, triggered a change in the copy-fish. This one had heard or smelled a deepdevil coming up from below. Since deepdevils never ate their own, a good disguise was effective defense.

Kafirr had no defense and no disguise, but the boy had been warned. He had to dive fast and be done before the real deepdevil arrived. Kicking down from the surface with his foot paddles, he edged toward the nearest grotto. This hole in the sea was a shaggy opening between the roots, filled with sinister shadows. Working fast did not mean working foolishly. Worse things than deepdevils clung to the roots all around him. Puffballs crowded the grotto, warning predators away with speckled red-orange and yellow spines. Nothing fed on puffs, or at least not for long. Kafirr had once seen a diver brush a puffball and die before he broke the surface. The victim's muscles had contracted so violently that his back was broken and intestines protruded through his gaping mouth. The only nice thing said about puffs was that they were quick. Stingworm venom took over a hundred painful hours to kill, giving their victims plenty of time to regret the mistake.

Kafirr pulled on his safety line for slack, then swam into the grotto. Large roots and boles were all about him, forming a twisting, shadowy tube barely three meters wide. Kafirr doubted that the deepdevil would follow him here. In a grotto the slightest mistake brought hunter or hunted into fatal contact with a venomous root dweller. Deepdevils preferred the root fringes where meals were scarcer but safer. Kafirr had to work down here, swimming naked among the multicolored puffs and the blue-banded stingworms, because the root fringes were plucked clean of seastones.

For as long as his lungs would allow, Kafirr used his pry bar to pick sea-

stones off the roots. When the need to breathe was overwhelming, he stopped filling his stuffsack and turned back on his safety line, kicking toward the surface.

Waiting at the entrance to the grotto was the real deepdevil. It took only a glance for Kafirr to tell that this was the true carnivore: two hundred kilos of hungry flesh feeder wearing the same wicked grin that he had seen on the copy-fish. The long white knives behind the grin were a part of this predator that even a copy-fish could not mimic. Deepdevils were as cunning as they were cruel. Kafirr had once seen a deepdevil feeding on a sea-snake calf several times its size. The deepdevil had ripped slice after slice out of the screaming calf, keeping its meal warm by avoiding a deathblow.

This deepdevil had seen Kafirr's line going into the grotto, and was waiting for a meal to come out. For a moment, Kafirr hung like a hooked fish, tethered to a surface line with death at the other end. Then the boy exhaled and slipped off his loincloth, leaving weight belt and stuffsack attached to the safety line. Wearing only his foot paddles, he dived deeper into the dim grotto, searching for the passage that led to the surface. Pressure stabbed at his eardrums, and shadows closed in around him. His vision blurred as oxygen debt built up and his limbs turned leaden.

Seeing nothing but a pale circle of rosy light, Kafirr kicked upward. With lungs bursting, he broke the surface in a fountain of fine spray. Taking air in great gulps, Kafirr was too exhausted to do anything but tread water. Here on the fringes of Windward Mat, holes opened in the tangle of branches overhead. Kafirr could look up from the somber water and see rose-colored clouds above the dense vegetation. Thin streaks of lightning crackled across the pink cloud bottoms, connecting deep red chasms many kilometers tall.

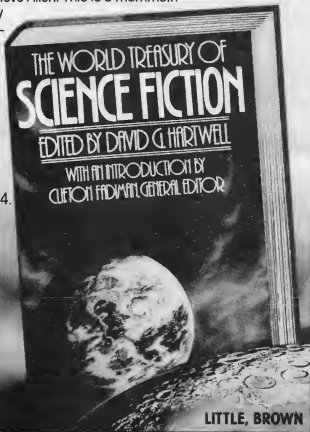
Catching a branch, Kafirr heaved himself into the dense, wet air. The brine that ran off his body was instantly replaced by beads of sweat. Kafirr preferred the feel of the water, which was several degrees cooler and did not tingle with static. He might have enjoyed the ocean's cool embrace if it had not included stingworms, puffballs, spinebacks, and hordes of large predators.

The supersaturated air tasted of ozone. Several seconds of rain swept by as the boy sat shaking, wishing that he never had to dive again. When his shivering stopped, he got up, threading his way through the catwalks

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to the dock where his line was tied. Green gillhoppers, slim humanoids with stunted fins and small, dry scales, jostled past him as though he were a moving obstruction. Gillhoppers ignored even the ocean that lapped around their mats; they could hardly be expected to notice adolescent humans. When he was growing up and learning to dive, Kafirr had wanted desperately to be a gillhopper. He had wished for green skin and scales; to never be hungry, to never go near the water. Now he was beyond such childish fantasies. He had been born a diver, and he expected to die a diver. His mother had dipped him newborn into the water, telling the sea to make her son a strong swimmer. Both Kafirr's parents had been divers; both had died in the water. The boy learned to ignore gillhoppers just as they ignored him.

Kafirr came to the end of the catwalks and stepped down onto the dock. Here the smell of the undrinkable, iridescent ocean was overpowering. Air and sea surface were pressed flat by many kilometers of atmosphere, and greenhouse effect kept the air hot and the water blood-warm. The Systems Guide said the air was breathable, but *bearable* would have been the better word. Excursionists took one whiff and went back to their landers for filters. Somewhere above the distant cloud tops was a feeble red sun that the boy had never seen. Dayside was always turned toward this invisible primary, so half the world was in red twilight, and half the world was a hot, dark oven. Kafirr had never been to Darkside; Dayside was bad enough.

A crowd had gathered around his slack safety lines. The outer ring was excursionists, not too secretly expecting tragedy. They were a typical tour group wearing nose filters and extravagant costumes — gossamer wings, shaved silver headdresses, chrome-yellow skindye with circular patches of purple fabric covering their private parts. Kafirr was no prude — he dived in only a loincloth — but the metal in the costumes bothered him. Some of these clanking off-world outfits had more metal than he could earn in a hundred hours of diving. Kafirr struggled to set aside his anger. Anger did a diver no good, and he had not seen enough of the universe to know that hating the hand that fed you was a common phenomenon.

As he slipped through the tour group, Kafirr saw divers down on their knees, sniffing for blood in the water and checking the copy-fish. They leaped up, happy to see the boy and slapping him on the back. Kafirr reeled in his safety line, spilling his stuffsack on the dock. Seastones

tumbled out. He selected a pure crimson for the diver who had stood watch over his line.

Making the best of his survival, the excursionists crowded closer to look at his stones. The ring of human and humanoid faces made the air even less breathable, wasting oxygen with inane noises. The immense atmosphere and planet-wide ocean kept a constant balance between CO₂ and oxygen, but it was not the balance that humans had evolved in. Only high atmospheric pressure made the air breathable, forcing relatively scarce oxygen into the blood. Divers bought whiffs of pure oxygen from vendors before each dive. It burned the back of Kafirr's throat and made his head spin, but pure, high-pressure oxygen fueled long, deep dives.

This time the seastones that glittered on the dock were prime. Only a few were pales and buffs; the rest were crimsons, beryls, and indigos. Kafirr got good prices. Off-worlders always paid the best at dockside. Seastones were small metallic deposits produced by prolific colonies of microorganisms that clung to the mat roots. The stones themselves were common enough and no problem to manufacture off-planet. What tourists were really paying for was the danger. As he bargained, Kafirr described the venomous grotto, the copy-fish, and the deepdevil. A harrowing story, told by a naked boy with a diver's whip-hard body, easily tripled the price. Insensitive souls could buy their stones much cheaper from waterfront shops, but those who wanted the real thing had to come to dockside, to touch the grim water, to buy from the diver who risked death to bring the stones up. Each curio came complete with an enthralling anecdote, and off-worlders had not crossed time and space just to get bits of metal and stone they could have bought at home.

Kafirr could see the rough justice in all this. If the waters of his world were not so deadly, off-worlders would pick their own seastones. Then he and the other divers would probably starve.

When the last stone was sold, the excursionists drifted away. Divers left to buy oxygen or lie down next to their lines, readying bodies for the next dive. Others sat gossiping in two or threes, or gambled for bits of metal and unsold stones. The water-shy ones moped alone or begged. A female diver strummed a crude-stringed dulcimer, and someone joined in with a pair of pipes, playing a tune brought from ancient Earth. As he struggled into his wet loincloth, Kafirr hummed what he thought were

the words, though he hardly understood them:

*May the circle be unbroken by and by, yes, by and by;
There's a better world awaiting in the sky, yes, in the sky. . .*

HIS HUMMING stopped, and Kafirr searched about in shocked disbelief. His pry bar was missing. He must have dropped it in the grotto when he was escaping from the deepdevil. The metal tool was so valuable that Kafirr snapped on his safety line, getting ready to dive after it. One look at the solid gray water brought his senses back. By now the pry bar was drifting down into the smoky depths, past the deepdevils, to where the pressure was heavy enough to float metal and flatten an armorfish. It was approaching the planet's sunken crust, where thousands of vents and volcanoes spewed out the minerals that gave the ocean its metallic taste.

Kafirr sat stunned on the dock, weeping at the unfairness in the world, missing his mother and father. Masses of metal landed and departed for orbit every dozen hours. Moored nearby was a slick orbital yacht, a Fornax Skylark, with a bulb-shaped body and a needle-sharp nose. Next to it was a hydrofoil cruiser with a catamaran bow and smooth airfoils over the stern. Both of these vessels must have held over a hundred tons of metal. Airless worlds and lifeless asteroids had metal in abundance, but on this ocean each gram had to be brought down from orbit or screened from the mineral-rich water. Gillhoppers did not use metal at all, except for trace amounts their mats extracted through osmotic pumps. Only oceanography and excursionists brought in the hard credit needed to support metal import or production. By far the most common metal makers on the planet were the microorganisms that made seastones, but most of their harvest was carried away as curios by off-worlders. What metal remained was expensive. The pry bar was his most important inheritance from his parents, the one material thing they had passed on to him. The few kilos that went into that pry bar would cost Kafirr more hard credit than he had accumulated in thousands of hours of diving.

Life went on by the dock. Kafirr could hear the pipes and dulcimer playing, along with the groans and yells of the gamblers. It grated him to hear that other divers could be so happy, while he had lost half his livelihood. But that was how it had to be; and music always played loudest

after a diver was pulled dead from the water.

Kafirr kept looking at the hydro-cruiser, and saw two xenos come down the gangway. The first was an Eridani Hound, a fairly common species in this reach of Eridanus Sector. Hounds adapted well to star travel and looked comfortably familiar to humans, resembling semi-upright hyenas or oversized baboons. This Hound was probably a pilot, since he wore a zero-g harness and had a comlink clipped to his left jaw. The Hound had a zestful, good-living air, and addressed his larger companion as Q'Maax'doux. This Q'Maax'doux was an aquatic xeno unlike any that Kafirr had ever seen, with webbed digits, strong legs, and the barrel chest of a swimmer. A blunt amphibian head sat directly on Q'Maax'doux's huge shoulders, topped with a webbed crest that blended into a dorsal fin running the full length of the spine. The creature had gill fringes under the forelimbs, and nostril flaps to keep liquid out of the lungs. Kafirr envied the webbing and powerful limbs, wishing nature had equipped him half so well for the water. The xeno had no clothes, no obvious sex, and was colored like a deepdevil, dark on top and light on the belly. The colors were shades of blue-gray that seemed somehow too drab and similar, as if the xeno's home star were whiter and brighter. The bulging muscles and rapid gait certainly suggested a home world with greater gravity, though local gravity was a tiring 1.6 g.

Q'Maax'doux spoke to the Hound through the standard tourist speakbox: "I have promised a school of silver rippers to the Institute of Zoological Morphology on Epsilon Eridani IV. In a few hundred hours, a high-boost institute ship will be here to take delivery."

"Silver rippers; sounds very exciting and very strenuous," said the Hound. "I would be right in the water beside you, but I have a rare allergy to ocean spray. The mere mention of deep water makes my skin creep about uncontrollably."

"I am sorry to hear of your handicap." The bigger xeno set the speakbox to a correct mix of pity and contempt: "At the moment I am in the market for nothing more dangerous than a couple of creatures suitable for deep-water work."

"Do you have any particular type of creature in mind?" The Hound also had a speakbox, whose tone signified helpful disinterest.

Q'Maax'doux indicated the green gillhoppers tending their pods from catwalks. "This planet has an indigenous semi-intelligent species.

They should know their own waters best."

The Hound reset his speakbox to indicate amusement: "Gillhoppers share my allergy and never go near the water."

Q'Maax'doux came to a surprised stop a few meters from Kafirr, with gill fringes flaring and dorsal spines erect. "This planet is entirely oceanic; how can any sensible species ignore that?"

"Are gillhoppers sensible?" said the Hound. "Since they ignore us completely, it is difficult to judge. No doubt they consider themselves prudent. They are related to several aquatic-prey species that inhabit the root fringes. Note that they still possess stunted fins and the rudimentary gills that give them their name."

Q'Maax'doux's neckless head could not nod; instead, the xeno set the speakbox for impatient assent. "All the more reason for them to be in the water."

The Hound grinned. He had learned from humans to express humor by exposing his fangs. "Eons ago the ancestral gillhoppers learned to grow these great vegetable mats, and harvest the mat pods. There are now hundreds of these mats totaling thousands of square kilometers, each inhabited by a different variety of gillhopper. Once they left the water, gillhoppers probably saw no good reason to go back. The waters of this world are not as safe as they should be."

Despite his troubles, Kafirr smiled at the Hound's grim humor. Heavy metals made the mat pods poisonous to humans. If Kafirr could have harvested pods like a gillhopper, nothing could have dragged him back into the water.

Q'Maax'doux found a rude noise in the speakbox's vocabulary. "Then what sort of creature shall I use for deepwater work?"

"That sort." The Eridani Hound turned his sharp snout toward Kafirr.

"Oh," Q'Maax'doux's speakbox transmitted profound disappointment. "I already have one of those, and frankly, I hoped to do better. These creatures were not bred for water work."

The Hound shrugged, another human gesture he had learned to imitate. "No doubt they do their best. Humans are what everyone here uses for water work. Their need for processed food and distilled water makes them tractable and tolerably anxious to please. Though, I would address him as 'man'; they are often slow in answering to 'creature.'"

Q'Maax'doux gave the Hound grudging thanks, and bid him farewell.

Kafirr was already on his feet when Q'Maax'doux strode over to him. "Man," said the xeno, "are you suitable for deepwater work?"

Kafirr bobbed his head, nodding and grinning. "Yes, yes, more than suitable." He wanted to land the job before the big xeno attracted a crowd. The hint of steady work drew divers as fast as blood in the water drew copy-fish.

"Have you done deepwater work before?" Q'Maax'doux was still casting about for some reason to reject the human.

"Yes, yes." Kafirr lied enthusiastically, amazed that a chance conversation between two xenos had turned his life around.

"Are you familiar with silver rippers?" Q'Maax'doux was still reluctant to reel in this easy catch.

"Of course, very familiar." Kafirr would have sworn he mated with them, if it would get him the job.

Q'Maax'doux grunted through the speakbox, then picked up Kafirr's safety line. Nothing had been said about payment, but then, Kafirr had never worked for a wage before. Anything was better than being a diver without a pry bar.

Leading Kafirr by the safety line, Q'Maax'doux boarded the hydro-cruiser. Kafirr could not really accept his good fortune until the gangway retracted behind him, vanishing into the seamless hull. "I have another man in my employ," said the xeno. "He will tell you your duties." Q'Maax'doux started to walk away with the safety line, then dropped it on the deck. "Wait here until the other man comes for you."

Kafirr waited for the man to come, his bare toes caressing the cruiser's smooth deck. The cruiser's reactor and superstructure were slung between the two light hulls. He could feel the hum of power from the stern and saw the graceful double curve of the bow. Kafirr had watched boats come and go all his life, and this one was by far the largest. The hydro-cruiser was over a hundred meters long and a dozen meters wide; but with superlight materials everywhere, Kafirr doubted that it massed a thousand tons. He saw a large electroprojector forward and two smaller ones aft. A matched pair of gigs rested on the fantail.

Still the man did not arrive. Kafirr studied the towering superstructure, topped by a silver hedge of antennas that he could not identify. Kafirr was puzzling over a laser range finder, when a voice behind him asked, "What are you doing here?"

Kafirr turned faster than a copy-fish, but it was not the man he had been expecting. Instead, he saw a woman stepping down from the gangway that led to the main deck. But for her sex, he might have been looking into a mirror. She was a diver: her head was shaved as close as his; her limbs were as thick, her belly as flat. Like Kafirr, she wore only a loincloth; her breasts were small, with large, flat nipples. Her eyes were as wide and brown as his, but the lines on her face were deeper. The woman was several score kilohours older than Kafirr.

"I am waiting for a man," said the boy. "The xeno who owns this boat—"

She cut him short with a curt shake of her head. "I am the man you are waiting for. Quasimodo never learned how to sex humans."

"Quasimodo?" Kafirr missed the allusion; the nearest tape of Victor Hugo's works was trillions of kilometers distant.

She cocked her head toward the main deck. "The xeno who owns this boat. Our web-fingered master does not mind the name, and just assumes that I cannot pronounce Q'Maax'doux. My own name is Nila." She said it in a flat voice; not an introduction, just information. "Q'Maax'doux hired me a couple of dozen hours ago, which makes me senior to you." There was a hint of challenge in how she said that. "The xeno said that we were getting something suitable for deepwater work. Are you supposed to be that something?"

Kafirr nodded. Lying to these cold brown eyes was going to be harder.

"So, you lied to him." Nila's words were easy and matter-of-fact; no accusation, just more information.

He started to deny it, but she cut him short with another shake of her head. "Look, there are not a dozen divers on Windward Mat who have ever done deepwater work. You are too young to be one of them. This xeno thinks that all humans are alike; you and I know better."

Nila paused, swinging her hand about to indicate that hydro-cruiser. "You like this boat?"

It was better than anything Kafirr had ever seen, but the boy barely had time to say yes.

"Right," she went on. "If you want to stay aboard, never lie to me. I do not care if you lie to Q'Maax'doux. I do that myself. But if I catch you in a lie to me, I will tell Q'Maax'doux that you have never done deepwater work. This tenderhearted xeno will heave you into the water and get another diver. Like I said, we're all the same to the xeno."

Kafirr's yes was overready, anything to keep that smooth deck beneath his feet.

"Good." Nila made the word sound menacing. "You stay, and you do all the diving. I do not go into the water."

The boy hated the water — only fools or suicides welcomed it — but he still found Nila's adamance startling. He had seen water-shy divers before; those with bad omens, or who had lost any will to live. You could read the fear in their eyes, and they never lasted long. Fear can kill you quicker than a puffball. But Nila did not look afraid of anything; her gaze was as cold and hard as the waves in the wake of a storm.

Kafirr agreed again, since doing the diving was no more than he had expected. Nila relaxed and took him to the forecabin. From amidships aft, the hydro-cruiser was almost all engine, but the forward hulls were filled with flotation foam and cross bracing. There were several pockets in the foam large enough for spacious cabins. The hydro-cruiser was human-built, but with more than humans in mind, and each cabin was big enough for a few Q'Maax'doux.

"This is mine?" the boy asked.

"Ours," Nila replied. "The xeno thinks one cabin is more than enough for two humans." She deposited him and left without ever asking his name.

Kafirr put Nila out of his mind and poked about, finding an inner cubicle with an equally large basin and bath. There was also a spacious locker stocked with meals. Testing the food, he found it better than any he had ever eaten. Only the need to dive would keep him from getting fat. Kafirr sprawled on the huge sleeping mat, thinking that if he died on his first dive, he would have already lived as no one he knew had ever lived.

Deep Water

GARRULOUS AS a gargoyle, Q'Maax'doux did not head right for deep water. Instead, the hydro-cruiser steered along the leeward line of mats at four hundred kilometers per hour, rocking the great floating gardens with its wake. Huge airfoils extended out over the stern to keep the cruiser from porpoising or blowing over at high speed. Every millimeter of the hydro-cruiser was computer-controlled and coded in Q'Maax'doux's language, a code harder to break than any human

cipher. Nila taught Kafirr the few words she had learned, the ones that opened hatches and called down ladders. Otherwise, there was nothing the two humans could do to control the craft or affect their fate. Their only duties were to keep to themselves until their xeno needed them. Swift orders punctuated long silences.

Nila acted like a shadowy extension of Q'Maax'doux, transmitting orders and limiting conversation. Neither human stood watches, and no duties drew them together. Kafirr ate when he was hungry and slept when he was tired. Still, it shocked him the first time he entered the cabin and found Nila sleeping. She lay curled on one side of the mat: with trim feet tucked below her buttocks, one hand shielding two tender breasts, the other hand clinched in front of her face, thumb tip almost touching moist lips. Curved in sleep, her strong shoulders had no tension. Close-clipped hair ended in a soft tangle at the nape of her neck. With her eyes closed, Kafirr could now see that her lashes were long and silky, and she looked much younger.

For some time he sat on the mat, close enough to have touched her, watching her breath move in and out. Then he went up on the deck to lie down. Kafirr needed his sleep, and he would have gotten no rest lying beside Nila.

When they were both awake, Kafirr tried to create conversation. On deck he asked Nila why they were not headed straight for deep water. Instead, they seemed to be on a high-speed tour of the mats that banded the planet's equator.

She shrugged, staring at the long jade mat that was whipping by, less than a kilometer to starboard. "Q'Maax'doux does not tell me. If our lord feels lonely, talking to humans is not the cure." Nila bent her wrist backward and twisted a finger against the solid substance of the cruiser. "The xeno thinks that talking to us is about the same as talking to the bulkheads. Maybe Quasimodo just wants to shake up the gillhoppers, startle them into showing how they run their mats."

That last comment was pure extravagance, a speculation that served no purpose except to converse with Kafirr. No one knew how gillhoppers controlled their mats. Gillhoppers treated the ocean the way humans sometimes treat sex. They pretended it did not exist, but privately knew every nuance of wind or current. Noting how gillhoppers tended their pods was better than satellite forecasting if you wanted to know what the

local weather would be like. Nor did their mats drift aimlessly. Instead, they inscribed slow circles in the planet's equatorial regions, somehow alternating between the prevailing currents that ran in the opposite hemispheres. Any other course might carry them through the terminator, into Darkside, where pods would die and mats disintegrate. How they maneuvered their mats through these currents was a mystery, gillhoppers being as vocal on this subject as they were on any other.

Kafirr could have been sharing his cabin with a gillhopper for all the attention he got out of Nila, but through it all he was enthralled. He was eating, sleeping, and not diving.

At the tip of the last archipelago, Q'Maax'doux made a wide turn that carried them out toward the terminator, then doubled back. The cruiser dropped its sea anchor off the most leeward line of mats. When he saw Nila coming to fetch him, Kafirr knew he was going into the water. She was cold and hard-eyed again, determined not to be drawn into conversation; as if contact with Kafirr could contaminate her. She merely handed him goggles, snorkel, and foot paddles.

Q'Maax'doux was waiting on the fantail, looking at the mats, now a few kilometers off. "I want you to swim," said the xeno.

"Where?" asked Kafirr.

Finding a patient tone in his speakbox, the xeno replied, "Swim to the root fringe, then turn around and swim back."

Swimming three or four kilometers in open water was not like diving for seastones. Out in the ocean there was no safety line, nor was there rest at the other end; the root fringes were loaded with puffs, and divers always worked from cleared docks. It was a long swim without a shred of protection, and Kafirr now knew how he would pay for all those hours of sleeping and eating.

Nila was ready by the oxygen line. Looking straight into his eyes, she helped him hold the oxygen mask. For a moment, Nila put a firm hand over his, then she took it away. Another pure extravagance.

Charged with oxygen, Kafirr swung over the stern rail and dived into the dull gray water. As he sank, Kafirr could feel that the sea was different here. He heard a strong sea surge in his ears, the pulsing of the planet-wide ocean. The water itself was vibrant and bottomless, divided into descending layers of light. Below, Kafirr could sense nothing but the limitless, smoky deep.

For a minute he fled from the unknown, then he saw immense inky shapes emerging from the murk.

Taking his direction from the cruiser's twin hulls, Kafirr kicked off toward the mat, senses alert for any sea changes. Almost at once a larger body broke the surface behind him. Kafirr spun about and saw Q'Maax'doux passing him. A few powerful kicks, and the xeno was well ahead, with a portable electropjector trailing from a forelimb. Kafirr wondered why the xeno needed lumbering humans crowding the water when he could swim like that.

He struggled after the disappearing xeno. By now the oxygen was gone, and the boy was breathing through the snorkel. Q'Maax'doux's finned feet vanished in the murk ahead, and the emptiness closed in. Kafirr was alone again, hearing the sea surge and feeling the vast void of the ocean, stretching around the world and down to the sunken planet surface. Deep water even smelled different, more mineral, more metallic; it had not been swept and strained by the mats.

After an eternity of kicking in emptiness, Kafirr saw copy-fish ahead. Now he was nearing the root fringe, though he had no idea how far out from the fringe these scavengers swam. The copy-fish crowded around him, knowing he was harmless and making no attempt to match his alien outline. Kafirr felt the comfort that copy-fish brought. Then they all turned in unison, alerted by an invisible signal. Without changing configuration, the copy-fish dashed off in the direction of the mats.

Kafirr redoubled his efforts. That sudden flight meant that the copy-fish had sensed a predator too big and horrible to be mimicked. For a full minute he fled from the unknown, then he saw immense inky shapes emerging from the murk. Big black shadows with slow-beating wings drew closer, growing larger and more distinct. Kafirr had never seen giant mantlewings before, but the configuration was unmistakable: thick black wings with a tired beat, followed by a long, undulating tail. Kafirr could not see their mouths, but he had heard they were two meters across and shaped like air scoops.

Kafirr kicked harder. The gliding shadows were gaining on him, eating as they went, swimming in a staggered formation so each had a clear feeding path. Kafirr could hear soft, high-pitched, and penetrating calls,

probing after him and echoing off the mat fringe. He had to reach the roots, where large predators did not dare follow; but his puny human effort would never be enough. The mantlewings did not even bother to increase their speed. One of the larger ones would scoop him up without even breaking rhythm. Blind panic kept Kafirr pushing forward, straining to see the root fringe through the gloom. All he saw were visions of his parents, and how they had died.

First there was the flash of a sighting laser, followed by an electric crackle in the water. Q'Maax'doux kicked into view, the electrop projector already at rest and trailing from a forelimb. The lead mantlewing was collapsing, folding in on itself. The others broke formation and circled about, confused by conflicting signals from their stunned leader.

Q'Maax'doux signaled for Kafirr to surface. The boy obeyed, his lungs and legs aching. When his head broke water, Kafirr saw he was still a kilometer short of the nearest mat. If Q'Maax'doux had not come back, Kafirr would have been an easy meal. The mantlewings were milling about a few hundred meters off, flapping to the surface, then diving again. The hydro-cruiser was charging over the waves toward its owner, obeying commands that came from Q'Maax'doux's comlink.

When the cruiser churned up, the soft black phantoms faded into more distant water. Kafirr called down a trailing ladder and hauled himself aboard. As he lay gasping on the fantail, Nila knelt beside him. In her lips and breasts, and in the cloud bottoms, Kafirr saw beauty that he had not remembered from before. All Nila said was, "You cannot study predators if you haven't any prey."

Q'Maax'doux was still in the water, directing the port crane to grapple and raise the paralyzed mantlewing. Kafirr lay limp and exhausted until he saw the mantlewing swing up over the rail. At once he rolled to his feet and retreated from the fantail to the main deck, before the monster could come down on top of him. Q'Maax'doux rode the mantlewing aboard, a conqueror lifted high on the back of the vanquished.

The xeno spent a happy hour or two butchering the living beast. Q'Maax'doux poked and peered, making measurements and stimulating internal organs with a variable-voltage prod, then cutting off bits for the bioscope and laser spectrograph. When the study was complete, Q'Maax'doux ordered the remains lowered into a hold. Then the xeno

came bounding up the ladder, reeking of bile and preservatives.

As soon as Q'Maax'doux's speakbox was on line, it began to fire questions at Kafirr: "How did that attack compare with attacks by other deepwater predators? Do they move that slowly in deeper water?" Q'Maax'doux returned to his special subject, the "silver ripper." It was known to be much smaller than the mantlewing, the xeno explained, but thought to be more active and even deadlier. How would Kafirr compare them?

Kafirr had nothing to compare the mantlewing with, and was too aghast to invent replies. The monster cut up and lying in the hold was twenty meters of wing supporting thirty meters of digestive tract. Something "more deadly" was not the sort of horror that Kafirr could just fabricate answers about. He had to admit that this piece of ocean was as far as he had ever been from a gillhopper mat. Q'Maax'doux adjusted the speakbox, playing back the boy's reply. When the xeno was sure of the sense of it, Q'Maax'doux dismissed Kafirr and turned to Nila. "This one is unsuitable, and you failed to apprise me. I am ready to hunt again, so this time you will swim."

Nila's brown eyes narrowed. She shook her head, without taking her gaze off the xeno. "I do not go into the water. You selected this diver, and so far he has been adequate."

Q'Maax'doux lowered the tone of the speakbox until the words turned to a growl. "You are going into the water. There is no other option. You may go in as my employee, or you may leave my employment and swim to the nearest mat."

Nila snatched the goggles and snorkel from Kafirr, and sat for a moment on the stern rail, adjusting the lenses and pulling on the foot paddles. She kept her chin and head averted. Muscles rippled under soft skin, making each movement swift and sure. As soon as the foot paddles were secure, she rose up on the rail, balanced for an instant, then went into the water, leaving barely a ripple. Kafirr watched with professional interest, finding her form perfect. Q'Maax'doux splashed in behind her, as powerful as the xeno was in the water, Q'Maax'doux could not match Nila's grace in the air.

Once the waters had swallowed them, Kafirr returned to the cabin. He told the lights to dim, and relaxed on the sleeping mat. The terror of the swim had been cleansing, a frightening baptism in deep water, but he

actually felt better for it. The worst had happened. Q'Maax'doux had discovered his lie, but had not thrown him overboard. Now Nila had nothing to hold over him. She was now the one in danger, but doing no more than he had done. Happy with the world, Kafirr went to sleep.

He awoke in hot darkness. Nila was standing over him, dripping wet, with her arms folded across her chest.

"So," said Kafirr, "you went in the water."

She glared past him, seeming to see nothing, not even the cabin bulkhead, and least of all the boy.

Kafirr did his best to coax her into a better mood. "Being bait for Q'Maax'doux is spooky, but it is much safer than working the root grottoes. No stingworms, no puffs, and Q'Maax'doux is an incredible swimmer. We are safer with the xeno than we would be alone, or with any dozen human divers."

Her eyes remained distant; her mouth moved slowly, trying to make her meaning clear. "You may find this difficult, but I do not want to be a happy slave: eating, sleeping, and relaxing on safe dives. I do not want some xeno making life-and-death decisions for me. Remember, Q'Maax'doux's ganglia are fixed on bringing in a school of silver rippers. Those are carnivores no bigger than copy-fish, but connoisseurs consider them the worst predators on the planet. Few have ever been captured, and live ones have never been taken off-planet. Ever wonder why? If he plans to use us as bait for silver rippers, it will not be a pleasant splash around the boat with a flock of mantleings. Rippers hunt in huge packs that can strip a thousand-meter sea snake in a matter of minutes. They will use that electroprojector for a toothpick."

Kafirr was somewhat stunned. He had never heard Nila speak for so long on any single subject, but once she started talking, there seemed to be no stopping her. Nila sat down on the mat, with her moist skin only millimeters away. Kafirr could see tears in her eyes, and felt the way he had the first time he saw her sleeping. He wanted to hold this new Nila, and tell her not to worry. "There are no rippers right now," said Kafirr. "We are safe and fed. Why worry about things that have not happened?"

Nila dried her eyes, then rested her hand on the mat next to his. She leaned forward, trying desperately to be understood, but her body had an intoxicating fragrance that kept Kafirr from concentrating on her words.

"Don't you see? What I want is no more diving, no more hours in the water."

"How?" To the boy, that sounded insane. Diving was horrible, but how could you give up the one thing that put food in your mouth?

"Do you know that a River Lines packet accelerates at thirty pseudo-gravities, and can reach near light speed in a few hundred hours?"

"So?" Kafirr could see no connection between diving and the performance of a River Lines packet.

"A few hours after Q'Maax'doux docks, the packet *Jordan River* will lift off from orbit. When it does, I am going with it. This job will give me the last credit I need to cover my fare. I am not going to die only hours from freedom."

"You are going off-planet?" Kafirr had never seen a moon nor star, never seen anything but the bottom of perpetual, impenetrable cloud cover.

"As far off-planet as a cheap ticket will take me. I was not born on this world," said Nila, "and nothing I have seen here encourages me to stay."

No wonder her head was always so high in the cloud cover, thought Kafirr. Nila was an off-worlder. To Kafirr, that explained a lot. Her distance and coldness were now natural, and he no longer wanted to touch her. Before, he had considered Nila aloof, arrogant, and uncaring, but he had never suspected she was a tourist. Kafirr got up and left, leaving her alone in the cabin.

Jordan River

Q'MAAX'DOUX SET a course for deep water, skipping over the equatorial current, heading for the terminator. The hydro-cruiser wove through floating forests spread over the sea. Long strands of gold-green vegetation lay in parallel rows, streaming with the current. The sea around the gillhopper mats had been free of such obstruction, because the mats swept up stray vegetation, growing by a process that only the gillhoppers understood and controlled. Cyclo-
nic storms blew out of the terminator, covering the sea-forests with sheets of warm rain. The hydro-cruiser skipped between the typhoons, sonar and all-weather guidance finding lanes through the storms and vegetation.

The sea change that had come over Nila continued. No longer aloof, she found reasons to comment on everything: the speed of the cruiser, the clouds overhead, the sea around them. With little else to do, Kafirr listened. Then, in their dark, warm cabin, she told him her whole story. It was overloaded with off-world concepts, but Kafirr could follow most of it.

"My parents retired young," she said, "and took me on Tour, investing their savings in several corporations. That way their credit would accumulate for millions of hours while they were on Tour. They would have come back both young and wealthy. I saw half the worlds in Eridanus Sector while I was still growing up. The deal was a cheap package tour bought from Pismicum Freight and Ferry; but to me, it was wonderful. Even this planet was a delight seen from orbit, a clouded pearl resting on the black fabric of space. As we decelerated from light speed, communications returned, and people discovered that Pismicum Freight and Ferry had gone belly-up. It was the biggest bust in millions of hours; ships were stranded all over Eridanus Sector. A battalion of smart lawyers got a venue ruling that said all claims against Pismicum had to be adjudicated at the sector capital in Epsilon Eridani system. I watched my folks go crazy. It takes three hundred thousand hours to get a message through to Epsilon from here, and claims on Pismicum were selling at a mil on the credit in the local securities market. Pismicum Freight and Ferry had only one local asset, the ship that had dumped us here, which Paradise Development attached. Pismicum had left monumental debts to Paradise Development, and at one mil on the credit, our little claim was not even worth a ride into orbit."

She lay back on the mat, looking straight up at the deckhead above. A thin metal skin and layers of foam kept out the gray sea and gray rain. "We were washed up on a worthless world. Anyone who knew us or could help us was tens of thousands of hours off by ship or signal." Her gaze seemed to go through the deckhead, searching for the heavens that were hidden by pink cloud cover. "Our original complaints are still crawling to Epsilon at light speed. My dad died trying his hand at diving. My mom became a wharf rat, telling her story to tourists and living on handouts. Finally, some mildly disgusting guy offered her a lift to Paradise system, just a single seat. He had no room for overgrown children, since I would not do for him what my mother did. I suppose if I had done it, he would have taken us both. He was pretty broad-minded in his own repulsive way. Mom said she would come back for me, but that was forty thousand hours ago."

She sat up, resting her chin on her hand and looking Kafirr over. "By then I was already a diver. You know what that is like. I spent long hours in the water, saving every bit of credit, eating any way I could. Quasimodo is warmth itself compared to some of the humans I worked for. At least this xeno never learned to sex humans, and does not expect us to spread for him after hard hours in the water." She paused, noting that he had said nothing. "This may not seem much of a tragedy to you, but I wasn't born here, and believe me, I know better."

"I am sorry for you anyway." Kafirr could think of nothing else to say. He did not know which Nila he liked better: the old Nila, who ignored him and whom he half-hated; or this new Nila, who seemed determined to expand and complicate his world. He half-wanted to tell her his story, and talk about his family; but how could he expose his private pain to Nila? Nila could think of going off-planet, but leaving was plainly beyond him. Diving was a delayed death sentence, but it was all he had.

She flopped back on the bed. "You probably are dumb enough to be sorry for me. Take some off-world advice, and start being sorry for yourself."

When Q'Maax'doux called them up on deck, the storms had evaporated, and the cloud cover was the gray-pink of decaying meat. In the wake of the rains, the clouds had come down to blend with the water, fusing into a single wet substance. At various distances into the murk, Kafirr could see long, undulating lines that looked like standing waves in the sea. These lines slowly slid across each other, appearing ahead, disappearing behind.

"Sea snakes," said Q'Maax'doux.

Looking closer, the humans could see that the moving wave crests were really parts of immense creatures, whose long bodies extended off into the fog. A dozen lay off either bow, thick black lines drawn on the sea mist. The cruiser was a slick little toy, rocking in the troughs between them, with three mites standing on its surface.

The triumph of the moment made Q'Maax'doux almost talkative. "This is the hunting ground," said the xeno as he spun the cruiser around. "Silver rippers are the only predators that feed on adult sea snakes." At low speeds, the cruiser had a tight radius, but even so, they nearly beached on the head of an oncoming snake. Wide gill fringes and thousands of feeding tentacles slid by the starboard hull. The huge head had no eyes: sea snakes steered by sonar and were stone-blind on the surface,

ignoring any obstacle smaller than a gillhopper mat.

Weaving between the rows of snakes, Q'Maax'doux kept the cruiser on a reciprocal course until it shot out of the rear end of the herd. Then the cruiser leaped about, bouncing high on the chop left by hundreds of huge bodies. The bow electropjector spun at Q'Maax'doux's command, taking aim at one of the rear snakes. When the projector flashed, the snake twisted in pain, howling out of its air holes, with a deep burn mark all along its back. Seismic waves spread over the surface as the wounded giant lashed the water.

Q'Maax'doux halted the cruiser, throwing out the sea anchor. The superstructure was swinging in a wild arc, falling and rising a hundred meters with each wave. The catamaran hull was stable at any angle of inclination, but as springy as a raft in heavy seas. As the spasms slackened and the beast grew limp, scavengers assembled. Nila pointed out several varieties of deepwater copy-fish.

The cruiser circled beside the dying snake until it stopped twitching. Then Q'Maax'doux hauled in the anchor and gunned the cruiser after the herd, slaughtering another snake in similar fashion. For hours the xeno continued to kill sea snakes, leaving an archipelago of long, dead islands rocking in the swell.

"This is senseless," said Kafirr. The sea snakes were so huge they hardly seemed to be living beings, but their screaming and thrashing would have gotten pity from a gillhopper.

"Silver rippers are not scavengers," Nila explained. "They come up for live meat. Only a wounded snake can get their attention. Do you want to go back to being bait?"

Many dead monsters later, the hydro-cruiser's sonar signaled a large contact separating from a deep thermocline. Q'Maax'doux announced that a shoal of silver rippers was rising to feed. Soon the sea around the latest victim began to boil with silver bodies. The snake's struggles increased. Now it was not only dying, but also being eaten alive.

It seemed then that the whole ocean had gone mad. The water was alive with thousands of silver rippers. While they tore at a struggling sea beast many times larger than the cruiser, scavengers crowded close to share in the feast. Even Nila had nothing to say.

Q'Maax'doux gave a gleeful command to the cruiser, and the boat began to fling little dark packets in a broad pattern. These small black

specks hung for a moment at the top of their arcs, then splashed into the sea. Where each one landed, the water was indented for a moment, then thrown up in a thick column. All around these pillars, the air and water surface shook with the muffled boom of deep explosions. For a full minute, the hydro-cruiser was hidden by a forest of splashes, then the last column collapsed and the sea subsided. The whole community of predators and scavengers that had been drawn by the dying snakes was knocked senseless, with most of its members dying. Q'Maax'doux tossed Nila a net. "You will look for any silver rippers that might survive."

Fresh copy-fish collected to feed on this new bounty. Working from the gigs, Kafirr and Nila moved over the dead sea, looking for living rippers. While Q'Maax'doux watched from the bridge, the humans dragged stunned carnivores into the hold, entering directly through an opening on the trailing edge of the starboard ram wing.

When they were done, they collapsed in the cabin. Kafirr said nothing; the killing had made him morose.

"I suppose you think this is a waste of time," said Nila. "Just wait; we may be doing all this for nothing. The rippers we got are so weak they may never reach Windward Mat, much less Epsilon Eridani."

Once the hold was full, Q'Maax'doux swung the hydro-cruiser around. The xeno was in a silent frenzy to get his catch back to Windward Mat, where they could be loaded for the long voyage to Epsilon E. Many hours out of port, Nila returned from the hold with the news that the rippers were dying.

Q'Maax'doux adjusted his speakbox to indicate annoyed indignation. "It is your job to keep them alive."

"Listen, Quas," the woman replied. "Your collecting methods have shaken them up. Silver rippers are social, active carnivores. You cannot just knock them silly, keep them comatose, and then expect them to come out on their own. They need to be revived, exercised, even reintroduced to eating.

"Then you will do that." Q'Maax'doux spoke simply, as though explaining the world to children.

Nila folded her arms over her breasts and gave him a sidelong look. "Do I pipe dance and dinner music down into the hold?"

"No," said Q'Maax'doux. "That would be pointless. Your companion will exercise them."

"Exercise them?" Nila did not even bother to look at Kafirr, who was himself astonished.

"Yes, have him push them about," said Q'Maax'doux. "Use mild electric probes, and hand-feed living bait to any that show signs of hunger."

Kafirr was staggered at the thought of spending any extended time in that hold. It was as dark and stagnant as the deepest root grotto, filled with dead and dying hundred-kilo carnivores.

Before he could speak, Nila spoke for him. "Don't you think that is a bit dangerous? If he succeeds, the little dears will wake up hungry. The boy will be pinned in a dark hold with angry and ill-fed predators twice his size."

Q'Maax'doux's blunt head swiveled back in her direction, and the xeno selected a lecturing tone: "Risk is what he is paid for. He is only human and has no special skills. It is sensible that any danger should fall on the least essential creature available."

Nila's eyes narrowed. "Well, listen, neckless wonder, I am no more essential than he is. Let me exercise the rippers."

Kafirr was surprised, but Q'Maax'doux was not. The xeno merely said that one would do as well as another.

"But," she added, "before I go back in that hold, I want to be paid in advance; I want to hold the payment in my hand."

"That is a strange and primitive request." Now Q'Maax'doux did seem surprised.

"I am a primitive-type person," said Nila. "Now or later — what does it mean to you?"

"Nothing," said Q'Maax'doux, and he paid her.

Kafirr watched the xeno's broad back depart. "You did not have to do that."

"Didn't I?" Nila gave him a sour look.

"I would have gone in the hold," said the boy.

"That is just why I did it." She shook her head. "This is a job that must be done only one way. The first rippers to wake up would have had you for hors d'oeuvres. Then kindly Quasimodo would have sent me into water warm with your blood, or made me walk home."

"Why don't you just call me stupid?" Kafirr complained.

"Because that would be rude. Look, I know I sound hard," said Nila, "but this job is my ticket." Her fist tightened compulsively around the credit

scrip. "I need to feel the payment in my hands, and to give Q'Maax'doux no reason to back out, or complain to the Port Authorities. That makes my life very simple; I just have to stay alive until the *Jordan River* lifts for Paradise system."

For the entire trip back, Kafirr had nothing to do but watch Nila go in and out of the hold. Several times he offered to help, but she shrugged him off. He should have been pleased to be paid for nothing, but instead, he felt slighted. The closer they got to Windward Mat, the more he felt the tension, thinking by now the rippers were bound to be more active. Nila was spending almost all her time in the hold, but Kafirr caught her getting up from a short rest in the cabin. "Look," he said, "this is crazy; you are bound to make a slip. Why are you taking all the danger onto yourself? There was a time when you did not care if I lived at all."

Nila sat up on the edge of the sleeping mat, looking up with weary eyes. "That was different. I was trying to keep myself separate from diving. I did not dare know you, or care for you. You were just a diver who was going to die in my place."

The boy sat down beside her. "But you have gone too far the other way. You will not even let me help."

She rubbed the sleep out of her eyes. "You cannot do what I am doing. You don't have the training for it." Seeing he was hurt, she reached out and took his hand. "It is just that you have spent your whole life taking horrible risks for next to nothing. What I am doing requires a keener sense of self-preservation. Are you mad at me?"

The boy shrugged. At that exact moment, he was not sure of his feelings.

She sighed. "I promise to apologize, if you promise to grab your ticket when it comes."

"My ticket?" Kafirr had never thought of anything as being reserved for him.

She looked hard at him. "If you get a chance to go off-planet, will you take it?"

"I guess." It seemed safe enough; no one had ever offered him even a ride around Windward Mat.

"Then I am sorry," she said. "You are not so stupid."

She paused and pressed his hand. "This farce is almost over. If anything happens to me, I want you to ask Q'Maax'doux for a ticket off-planet. Tell

him that the Port Authorities will not let him lift off if there are any complications."

"What complications?"

"Just promise to use your brain. If anything happens to me, just press the xeno. Quas is not all that smart. I have already beaten him. Having my ticket makes me free; even if I never come back from that hold, even if I die in the next hour, I have still won. I would feel better knowing you had a chance, too." She leaned over and kissed him. Her warm body and soft lips took Kafirr by surprise. She left him sitting on the mat, watching her leave for the hold. Her strong back was beaded with sweat; buttock muscles bunched and released with each firm step.

Even when she was into the hold and out of sight, he sat there, thinking over what he would say when she came back. He turned the words over in his mind until he had them just right; but Nila never returned to the cabin.

When they docked at Windward Mat, Nila had still not come up from the hold. Kafirr was worried, but Q'Maax'doux showed no concern. The xeno was delighted to have docked, and made immediate plans for transferring the entire hold container from the hydro-cruiser to the Skylark. Kafirr went at once to check the hold, before it was embedded in the orbital yacht and headed for Epsilon E.

Pausing at the hatch, he heard no noise from behind the panel. He said the alien word that opened the hold, and light streamed into the gloom, scattering on the water's surface and dancing off the bulkheads. Active silver shapes whipped back and forth amid the light. Eagerly, they collected near the hatch, jostling each other, displaying the feeding energy that distinguished the silver ripper. Once this frenzy was under way, nothing halted it until prey or appetites were exhausted. There was no sign of Nila, just a bed of bones at the bottom of the hold. Kafirr could not even see if they were human, but the lively shapes and the absence of Nila told him all he needed to know.

Both the hold and human cabin were in the starboard hull. Kafirr retraced his steps. He had seen Nila go into the hold. Since she had not come back out of the hatch, she must have gone into the water with those creatures. The only other hold exits were underwater ones.

When he got to the main deck, Kafirr told the xeno that Nila had gone into the hold and now was missing. He added that the creatures in the

hold were very much alive and alert. Q'Maax'doux was happy to hear that all was well in the hold, and Kafirr had some trouble fixing the xeno's attention on what had happened to Nila. But this time the boy persisted, drawing on some of Nila's anger.

"Nila?" Q'Maax'doux's speakbox turned the name into a question.

"Yes, the other human."

"That man demanded — and received — payment in advance. His relationship with me has ended, and so should yours." With unsentimental efficiency, Q'Maax'doux proceeded to pay Kafirr off as well.

Kafirr looked down at the scrip in his hands; it was more than enough for a new pry bar, but he remembered how Nila had spoken to him a few hours before. "This is not nearly sufficient; a human is missing. I want the Port Authorities to inspect that hold, and examine the bones at the bottom."

"Impossible," explained Q'Maax'doux. "As you must know, I am working within a tight schedule. There is no time to remove the rippers. I must lift at once to make connections with a high-g institute ship headed outsystem. You may be certain that the content of this hold will be thoroughly studied by the Institute of Zoological Morphology when I reach Epsilon Eridani IV. A report will be made available to the public."

This promise of eventual publication did not meet immediate needs. "That is hundreds of thousands of hours in the future. Am I supposed to just sit here wondering what happened to Nila? What do I say if someone comes looking for her? You and all the evidence will be off-planet. I will be left to face all the complications and consequences."

Q'Maax'doux set his speakbox for patient reproof. "What consequences? One more or less is no concern. Who would come looking for him?"

"Her," Kafirr corrected.

The xeno adjusted the speakbox: "Who would come looking for it?"

Kafirr was adamant, thinking of Nila's last words to him, because the last advice of a diver is always the most valued. "Then I am going direct to the Port Authorities. I will not be left holding the line; either we both answer their questions, or we both go off-planet."

The speakbox expressed surprise. "The specimen deck on the Skylark is full, and I no longer need your services. Taking you to Epsilon Eridani would be a pointless exercise."

"Fine," said Kafirr. "I will take a ticket to Paradise system instead;

the *Jordan River* lifts within the hour."

More surprise came from the speakbox: "Such an expense exceeds all reasonable wages."

"Be unreasonable," Kafirr advised. "A human is missing, and those creatures in the hold are material evidence. The Port Authorities might not want you to export them."

Q'Maax'doux took back the scrip, telling Kafirr that it was senseless to haggle with a human. The xeno then told the hydro-cruiser's comlink to order a single-seat, one-way ticket to Paradise system.

In less than an hour, Kafirr was waiting for a shuttle to lift, thinking of Nila and watching magnetic cranes transfer the hold container from the hydro-cruiser to the Skylark's plump belly. He was surrounded by a small wave of humanity. The last humans allowed to board the shuttle were pressed against the loading gate, carrying packages, bundles, bags, and possessions of every description. With their future slung on their backs or tucked under their arms, these lucky few were preparing to start life anew in Paradise system. The shuttle doors dilated, and people stumbled forward, sea creatures surging into the metal net.

The shuttle pilot was an Eridani Hound, cordial and aloof, whose firm commands showed he was used to herding humans about. He packed them as tight as he could, so the press of bodies and cargo would cushion any minor acceleration effects. When the Hound came to him, Kafirr studied the alien face and asked, "Do you remember me? You got me a job with Q'Maax'doux."

The xeno paused. There were so many humans; they all looked so alike. "The diver on the dock? Deep water must have been good to you, if it brought you here."

"It was a mixed experience," said Kafirr, "but I am grateful for it."

The Hound nodded; human gratitude was something the xeno had learned to take with good grace, though he had no particular use for it.

"I would also be grateful for a seat over there." The boy pointed out an open space beside a nearly nude young woman with a short pelt of brown hair.

"Of course," said the Hound, drawing his lips back in an imitation of a human grin. The Hound had learned to sex humans. He sat Kafirr down, pressing him against the female and telling them to both look up at the viewer. "Soon you will have your first look at the stars."

The woman turned to correct the xeno. She was about to say that she had seen the stars before, but seeing Kafirr made her forget the Hound. "You," she said, "I did not really expect to see."

It was the first time Kafirr could remember seeing Nila's brown eyes wide with surprise. He enjoyed the feel of her bare hip and shoulder pressed against his. "I knew you would be here, Nila. I knew it as soon as I saw what you had left in the hold."

"Yes," she said, hanging her head but keeping her smile. It was the sort of gesture the Hound might have made, to mimic human sorrow. "The silver rippers all went belly-up. Maybe I did not walk the little monsters well enough. Anyway, I did my best to break the tragedy gently; you know what a sensitive soul Quasimodo is."

The gasp went round the circle of faces as the shuttle burst through the cloud cover and they saw the stars spread overhead. The world they were leaving looked just as Nila had said it would, a white pearl hanging on the black ear of night. The people huddled in the shuttle began to sing:

There's a better world awaiting, in the sky, yes, in the sky. . . .

Nila took Kafirr's hand again, saying, "It could hardly be worse."

The Skylark lifted soon after, and matched with the high-boost ship bound for Epsilon E; but when Q'Maax'doux displayed his catch, the Institute of Zoological Morphology was not interested. They told him that the hold held nothing but copy-fish, common scavengers that would enter any baited hold. The copy-fish fed on the dead rippers while mimicking the dying ones. Q'Maax'doux took his speakbox off and cursed shiftless, thieving humans in an alien tongue.



NEWS
FROM

Questar

SCIENCE FICTION/FANTASY

THE SAGA CONTINUES IN PAPERBACK! CYTEEN: THE REBIRTH From Hugo Award-winning Author C.J. Cherryh



From C. J. Cherryh, author of *Downbelow Station* and *Chanur's Homecoming*, comes *The Rebirth*—part two of her critically acclaimed epic CYTEEN. Originally

published as a single hardcover, CYTEEN is now being released as a Questar paperback trilogy.

In Part I: *The Betrayal*, a vicious conspiracy turned the home of assassinated leader Ariane Emory into a city-sized psychology lab that performs experiments on human subjects.

Now, in Part II: *The Rebirth*, Ariane's frozen body falls victim to this vast tyrannical experiment. Her enemies are attempting to raise an Ariane as powerful as the first, yet subservient to their wishes. But Ariane's clone—as headstrong as the original—has other plans.

Cover art by Don Maltz 0-445-20451-0/\$3.95
(In Canada: 0-445-20455-9/\$4.95)

*Released in February 1989:
CYTEEN: *The Betrayal* 0-445-20452-4/\$3.95
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*Coming in April 1989:
CYTEEN: *The Vindication*

At Bookstores Everywhere



Also this month: MEN LIKE RATS

A fascinating, fast-action science fiction novel from Robert Chilson, author of *As the Curtain Falls* and *The Shores of Kansas*.

Men and women live like rats in the corridors and pantries of gigantic conquering aliens. They scavenge incomprehensible goods, avoid traps set for them, and fight off the mutated human beings sent to exterminate them.

But when they uncover a horrifying alien plan, a ragtag group of survivors must wage a desperate battle to save humanity's future.



Cover art by Barclay Shaw
0-445-20763-9/\$3.95
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At Bookstores Everywhere



A WORD FROM Brian Thomsen



When it comes to world-building, one must keep in mind the perspective of both the character and the reader.

If the reader has been treated to the background of a story with its origin or backstory, all is well and good. But what if the story starts in a strange new world, as in *The Monsters* by Robert Shekley or *Nightfall* by Isaac Asimov?

Such is the case with *MEN LIKE RATS*. Man has lost his dominion over

the world, and how he lost it to some superior beings is unknown. What is important is that man is reduced to a scavenger race in a world ruled by aliens. It is existence from a different perspective, and all part of world-building.

When you see me around, ask me about the author of *Revolt on Alpha C* (It was written 35 years ago).



Books to Look For

BY ORSON SCOTT CARD

The Healer's War Elizabeth A. Scarborough, (Doubleday/Foundation, cloth, 303 pp, \$17.95)

ELIZABETH SCARBOROUGH's *The Healer's War* is the finest work of fiction I've seen about the Vietnam War.

This is hardly a surprise. Scarborough *should* be an excellent writer. Her previous novels have proven her a master of the hardest of all types of writing — comedy — in which you not only have to be good at creating a story, character, and milieu, but also have to twist your characters' pain until it's funny.

With *Healer's War*, though, Scarborough had no interest in making that comic twist. Scarborough, a former nurse and Vietnam veteran, knows and loves the people in this book; they are not to be laughed at.

Because of her direct experience, the attitudes and experiences of

military, medical, and civilian characters all ring true. But Scarborough is not a mere reporter. She is a fantasist, and so she takes us through the bloody reality of Vietnam into the darker — and brighter — truth that only fantasy can discover.

Xe, a wizened old Vietnamese wounded in a firefight in the countryside, is brought in for medical treatment, against all regulations, by Charlie Heron, an American soldier who has come to love the Vietnamese people and knows what Xe's survival means to them. Xe, though, has his own plan — to pass his healing power to a nurse named Kitty.

This book is about pain, and it hurts sometimes to read it. Yet it is not pain that makes it powerful. The novel begins with Kitty nearly causing a girl's death through a mistake she made, or might have made, despite all the best inten-

tions. Thus Scarborough recapitulates the whole American experience there: We came to save them, and instead do harm, and don't know how to undo it. Yet the novel ends with something like hope. Even magic can't undo the world's suffering, or even our own mistakes, Scarborough seems to say, but there are still some good things within our reach, some people we can help, and that is what we live for.

The Devil's Arithmetic Jane Yolen, (Viking/Kestrel, cloth, 170 pp, \$11.98)

I recently visited a young-adult librarians' convention in Texas. One of the speakers was an editor for a journal that reviews new children's and YA books, to help guide librarians in their buying decisions. I was astonished when, in the midst of otherwise illuminating remarks, he launched an attack on a new book by Jane Yolen — *The Devil's Arithmetic*.

This is a simple but devastating story about Hannah, a modern Jewish girl who, bored with her parents' insistence on remembering things, is plunged back in time, into life on the edge of death in a Nazi genocide factory. Hannah is seared by the experience, and so are we.

The critic did not deny this.

Instead, he questioned whether it was worth doing this way. Putting a modern girl back in time seemed to him to trivialize the holocaust. Why, he asked, when we have a *real* account like *The Diary of Anne Frank*, should we waste time with Yolen's "less real" story. Yolen's hero is never at risk; she comes back to the modern world, where she is "safe."

Ah, the blindness of the literary bigot. So sure that all fantasy is frivolous, escapist, he is unable to understand that Yolen's book might, to some readers, be *more* powerful and *more* real than *Anne Frank*. After all, Frank's account ends where the true horror begins. And Anne Frank, however sympathetic she was, died before most young readers' parents were born. Through the character of Hannah, Yolen forces today's young readers to put *themselves* in the most terrible part of the most terrible crime mankind is capable of, and makes it clear that we are never "safe."

Those who read this book will never forget; and, just as important, they will know why we must never forget. In a world that includes criminal governments like those that have slaughtered innocents in Cambodia, Ethiopia, and Chile, I would like to think that this generation of children will *all* read *The Devil's Arithmetic*, precisely be-

cause it does not trivialize the holocaust. It infuriates me to think that because of an elitist critic, there may be thousands of children who cannot find this book in their library.

Shame on him, and on all who would narrow the literary possibilities of children.

Wyrlmaker Terry Bisson, (Avon, paper, 1988 [reprinted from 1981], 176 pp., \$2.95)

This book is Terry Bisson's entry in a fantasy tradition that includes George MacDonald's *The Light Princess*, Patricia McKillip's *The Throne of the Eril of Sherill*, John Crowley's *The Deep*, and Geoffrey Ryman's *The Warrior Who Carried Life*. All of these seem to be very short novels; but in fact they are at exactly the same length as the great medieval romances like *King Horn*, *Havelok the Dane*, and *Sir Gawain and the Green Knight*.

These books are not any longer because they don't need to be. They aren't meant to develop full characters or a detailed, believable milieu. In fact, they are not "short novels" at all. They are long fables, stories that explore a single quest or adventure with no distractions.

Wyrlmaker, like Crowley's and Ryman's fables, is at root a story of a character who discovers the

secrets of creation. In Bisson's story, we find the universe to be a tapestry woven out of moebius strips. Kemen pasTreyn is forced from his native wyrl, leaving behind blood and horror, but carrying with him a sword named Wyrlmaker. He joins a vast migration of land-bound wooden ships, finds himself among sacrificial offerings under the earth, and, like the sorcerer's apprentice, faces a horde of enemies that he created himself. When I closed the book, it was almost impossible to hold in my mind all the places I had been, all the things I had seen and done in so few pages.

Unfortunately, there is a cost. Because Bisson, like Crowley in *The Deep*, is creating a new and original world without using the novelistic techniques of detailed description, the story is sometimes confusing, particularly at first, where I found it hard to engage. Some readers may never become emotionally involved; that's often the price of this literary form. It's like that long slow pull up to the top of the roller coaster track. Nothing thrilling about it — but you have to go through it to get the rest of the ride. I say it's worth it.

Trust Me On This Donald E. Westlake, (Mysterious Press, cloth, 293 pp, \$16.95)

OK, I know I'm supposed to

review fantasy and sf, and this one is a comic mystery. But if I know anything about sf and fantasy readers, I'm betting you'll like this book as much as I did. On the way to her first day of work as a reporter for a supermarket tabloid, Sara finds a dead body in a car at the side of the road. That's the mystery. But the delight of this book is the marvelously funny and absolutely believable menagerie of characters who are involved, like it or not, in putting out the *Weekly Galaxy*. If you ever stand in the checkout line and look at those grotesque headlines and ask, "Who writes this stuff and how do they live with themselves?" then you *must* read this book. You will laugh out loud. I promise. Trust me on this.

Greenmantle Charles de Lint, (Ace, paper, 327 pp, \$3.50)

Greenmantle is not only a gripping thriller but also an introduction to the most profound philosophical issues in literature — what stories are for and how they create us.

Charles de Lint shies away from the title I've bestowed on him — the prophet of contemporary fantasy — and in fact there are authors like Peter Beagle and Robert Holdstock

who have cut their own roads into the unexplored woods of non-horror contemporary fantasy. But de Lint shows an awareness of what he's doing that makes his fiction not just a damn fine read but also a clear map of the road that fantasy follows through the human mind.

Greenmantle is a miracle of seamless combination. A former mafia hit man straight from the world of *The Godfather* and *Prizzi's Honor* winds up living in the Canadian woods next door to an eccentric teenage girl straight out of young adult literature, with a divorced mother who would fit in very nicely in contemporary social novels. And yet all of them belong together, fulfill each other, even as their lives are disturbed, deformed, remade, *saved* by the strange music and unimaginable power of a godstag who is endlessly fleeing from the hunt.

Even as the novel discusses primal human urges, it arouses and satisfies them in the characters and, for me at least, in the reader. De Lint is perfectly capable of writing ho-hum ordinary fantasies like his recent *Wolf-Moon*; but with *Greenmantle* he shows that, far from being mere escapism, contemporary fantasy can be the deep mythic literature of our time.

Richard Lupoff's first F&SF story in some time concerns the Tindles, whose eighteen-year marriage was hovering somewhere between stale and oppressive, until Mr. Tindle received for his birthday a computer that brought a new meaning to the word "software." The author's most recent novels include THE FOREVER CITY and GALAXY'S END.

Mr. Tindle

By Richard A. Lupoff

MRS. TINDLE WAS in bed sipping her evening tea and reading a paperback romance. She had made her way upstairs and climbed into the twin bed after a dinner of broccoli and asparagus spears. It was her custom. Not that she prepared broccoli and asparagus spears for herself and Mr. Tindle every night. Sometimes she made them carrots and rutabaga. Occasionally she added a boiled potato and, once a month, animal protein — a cheese sauce over the vegetables, for instance, or a soft-boiled egg garnished with lettuce leaves.

But tonight it had been broccoli and asparagus.

Mr. Tindle was in the computer room. The room had gone through any number of changes in the Tindles' eighteen years of marriage.

At first it had been Mr. Tindle's den. That was Margery's — Mrs. Tindle's — idea. She thought that there was a manly sound to it. She had decorated the room for Mr. Tindle, with a leather-topped desk and swivel chair, sporting prints and a brass hat rack. She had stopped just short of

buying a stuffed moose head, although she had bought a mounted speckled trout on a wooden plaque for Mr. Tindle's birthday the following year.

Mr. Tindle had never been quite comfortable with a den. He was a slight man, with weak eyes, a small pot belly, and receding hairline.

After Mrs. Tindle gave up on the idea of a den, she had converted the room into a library. Out went the leather-topped desk. Mr. Tindle was sorry to see it go, but didn't want to start a fight over it. Out went the swivel chair. Out went the stuffed trout. Mr. Tindle's heart sang when the garbage man took that away.

The brass hat rack survived. Bookcases were installed, and Mrs. Tindle arranged the purchase (on the monthly payment plan) of several sets of classic books in handsome, matching bindings. There was a set of Dickens, a set of Mark Twain, and a full shelf of inspirational volumes, plus a twenty-six-volume encyclopedia with gilt on the tops of the pages and thumb indexing on the sides.

Mrs. Tindle ordered a pair of overstuffed chairs for herself and her husband, and had them placed in the library.

Mr. Tindle seemed quite pleased with the new furnishings of the room, and began spending hours in the library after dinner each evening. He would sit in an overstuffed chair, reading a handsome leather-bound, gilt-edged classic while Mrs. Tindle watched him over the top of her paperback romance.

Mrs. Tindle was gratified to see Mr. Tindle sitting in the chair she had ordered, in the room she had decorated, reading a book that she had selected. In fact, Mr. Tindle looked more than comfortable or contented; he looked positively happy.

Mrs. Tindle said, "Albert, what's that you're reading?"

Mr. Tindle replied, "Mark Twain, dear."

Mrs. Tindle's brow furrowed. Mark Twain! That was supposed to be wholesome material about young boys growing up in Missouri, wasn't it? Images of a kind of Norman Rockwell small town rose before Mrs. Tindle's mind's eye.

Mr. Tindle had gone back to his reading, and the look on his face, while a happy one, seemed to Mrs. Tindle to be far too active and intense for comfort.

Mrs. Tindle noted the place on the shelf where Mr. Tindle's book had

been removed. The following day, while Mr. Tindle was at work at the Department of Social Assistance, Mrs. Tindle entered the library. She found the book Mr. Tindle had been reading the night before, found his bookmark still in it, and read the pages Mr. Tindle must have been reading the previous evening.

Mrs. Tindle was shocked.

This was no Norman Rockwell town.

That night, over a dinner of cooked carrots and coleslaw, Mrs. Tindle asked Mr. Tindle how things were coming along at the Department of Social Assistance. It was a question that Mrs. Tindle had been asking for the entire eighteen years of their marriage.

This included the twelve years that Mr. Tindle had been employed by the Department of Social Assistance as a Payment Analyst/3. Prior to that he had been employed by a large insurance company in a similar capacity, but he found the less competitive world of public service more congenial than that of the private sector, and had consequently never regretted his move.

Mr. Tindle said, "All right. Things are all right. There's a lot of pressure, you know. Glauer's been after me, but I can handle him, I guess."

That was the answer that Mr. Tindle had given each time Mrs. Tindle asked about work, ever since Mark Glauer had become Mr. Tindle's supervisor. Prior to that his supervisor had been Ms. Jane Westerley. In those days, Mr. Tindle's answer to Mrs. Tindle's question had been the same, except for the change of name and gender. Actually, Mrs. Tindle had been pleased when Ms. Westerley had left her job at the Department of Social Assistance and been replaced by Mr. Glauer. Mrs. Tindle didn't approve of men working for women managers. There were too many opportunities for temptation.

"How are you getting along with the computerization project?" Mrs. Tindle asked.

Mr. Tindle was startled. He wasn't accustomed to the show of interest in his work, beyond the ritual question and answer. But he replied, "There's no question that productivity will be increased. And accuracy, too. You know, it isn't easy to keep up both one's productivity *and* one's accuracy in a job like mine. One or the other, yes. But both — well, and the case folders keep arriving day after day. . . ."

He shook his head in despair.

"I understand," Mrs. Tindle said. "I certainly understand." She placed another carrot on Mr. Tindle's plate. "That's why I was wondering if — well. . . ."

She let her voice trail away and waited coyly for Mr. Tindle to coax her secret out of her.

"Yeah?" he said. "What were you wondering?"

"Your birthday is coming up, and I thought you might like a computer as a gift. Just think, your very own computer! I saw an ad this afternoon, on television. There's a big computer sale downtown this weekend, and I thought I could get you one. Imagine, my very own husband with a computer all his own! Wouldn't you love that, Albert?"

Albert — Mr. Tindle — knew that he was going to get a computer for his birthday, whether he wanted it or not. He also knew that Margery would give him no peace until he said that he'd love to have a computer all his own, so he might as well say it now and avoid agonizing minutes of verbal cues, game-playing, and psychological manipulation, at the end of which he would have wound up saying that he would indeed love to own a computer.

"I'd love it," he said.

That was how the library became the computer room.

In fact, Mrs. Tindle didn't even go downtown to buy the computer. It was a dark gray day in early autumn, and black clouds threatened to open up any minute. Mrs. Tindle didn't want to catch cold. Nor did she want to risk being struck by lightning, unlikely though that was.

So she phoned the store and ordered the computer. The salesperson was a very pleasant, very enthusiastic young woman. That took Mrs. Tindle somewhat aback. But the young woman rattled on about hard and soft disks and color monitors and communications modems and graphics packages and printer drivers. Mrs. Tindle didn't understand any of what the young woman told her, except that this was a wonderful bargain and just the thing to keep Mr. Tindle home and busy with constructive activities every night and weekend.

The young woman asked if the Tindles had any children, and Mrs. Tindle informed her that they had not been so blessed. The young woman said that the computer came with a variety of games for adults as well as children, but Mrs. Tindle told her that she didn't want anything frivolous. The young woman repeated back, "No games, then. You get a bonus soft-

ware package, but you don't want any games. I'll make sure of that."

Mrs. Tindle told the young woman that she wanted the computer delivered on Mr. Tindle's birthday, not a day sooner and not a day later. The young woman promised that the machine would be delivered on the right day, with computer precision. She laughed a little at her own joke.

Mrs. Tindle sniffed, thanked the young woman somewhat coldly, and hung up.

On Mr. Tindle's birthday, he arrived home a quarter of an hour late. His face was somewhat flushed. It had been raining, on and off, and his hat was spotted, and there was moisture on his glasses.

Mrs. Tindle demanded to know where he had been.

Mr. Tindle said that his co-workers had invited him out for a celebratory drink after work. Everybody was there — Jack Donovan, Larry Corcoran, Beans Harris — and he had accepted rather than offend them. He'd had just one quick beer and got away as quickly as he could. He was sorry that he'd worried his wife.

Mrs. Tindle said that she wouldn't let Mr. Tindle's thoughtlessness ruin the observance of his birthday. She coyly refused to tell him what his present was (for all that, he had known for weeks what she was planning to get him) until after he had eaten a dinner of boiled cabbage and succotash.

Then she led him to the former den and former library, now refurnished as the computer room. It contained the computer, monitor, printer, modem, a box of reference manuals, and a clear plastic cube with software disks in it. The only furniture in the room was a worktable that held the machinery, and a straight-backed chair.

Mr. Tindle exclaimed that this was just what he'd hoped for. He gave Mrs. Tindle a kiss on the cheek and sat down in front of the computer. He remarked that it was similar to the one he used in his work at the Department of Social Assistance. He reached for the on/off switch, turned the computer on, watched its lights glow for a few seconds, then turned it off again.

Mrs. Tindle said that she hoped having a computer of his own would help him with his work.

Mr. Tindle opened the box of reference manuals, removed the top volume from the box, and began to read.

After standing and watching Mr. Tindle read the manual for a few

minutes, Mrs. Tindle retired from the room. Shortly she was in her bed with her romance novel.

Mr. Tindle opened the plastic cube, looked through the disks it contained, selected one, and slipped it into the computer. He turned the machine on and began clicking at the keyboard.

In a little while, Mrs. Tindle heard the printer clattering. She smiled, put down her romance, turned off the light, and closed her eyes. For a while she would hear the soft clicking of the keyboard, then the clatter of the printer. She dozed off.

The following weeks were among the happiest that Mr. Tindle could remember. Having a computer of his own might not have helped him any with his work at the Department of Social Assistance. But then, if the truth be known, the work was more tedious and mind-deadening than it was really difficult. The Social Assistance system was an incomprehensible jumble of laws, rules, and procedures, most of them issued in volumes of opaque and self-contradictory prose. However, the computer opened whole new areas of interest and stimulation for Mr. Tindle.

Besides, Mrs. Tindle began leaving him alone. At first she had brought a second chair into the computer room, and watched him as he used the machine each evening. But she soon tired of that, and began retiring to bed with her romances instead. She complained that the noise of the printer annoyed her, and insisted that Mr. Tindle keep the door of the computer room shut while he was inside.

Mr. Tindle did not object. In fact, there was something very pleasant about sitting in front of the computer with the monitor screen glowing, an interesting program booted up, and the door shut behind him. There was a window behind the worktable, and Mr. Tindle would glance up occasionally, literally forgetful of whether it was summer or winter, day or night.

When Mr. Tindle had a problem with the software, he could even call a toll-free number and get assistance. (There was a telephone extension in the computer room, another beside Mrs. Tindle's bed.)

And there were hardly ever any quarrels between Mr. Tindle and Mrs. Tindle over the computer, even though Mr. Tindle spent many, many hours seated before the screen.

One evening, Mr. Tindle left the computer room and went to the kitchen to prepare himself a slice of whole wheat toast as a snack. There

was a thunderstorm in progress, and a loud clap of thunder sounded while Mr. Tindle was downstairs.

He returned to find Mrs. Tindle just leaving the computer room.

"The thunder woke me up," she told him. "You weren't in there, so I turned off your machine. We mustn't waste electricity."

Mr. Tindle raced past his wife and stood looking at the computer. He took off his glasses, rubbed his eyes with the heels of his hands, and turned to his wife, blinking.

"Never do that again," he said.

"Why not?" she demanded. "Have you even looked at the electric bills lately?"

"You've ruined hours of work," he said. "You should never just turn off a computer in the middle of a program. You have to log off and boot down. You can't just turn the on/off switch to off. You'll lose all the work you've done. And you can damage the software, too. Maybe even the hardware. I had a lot of work in there—"

Mr. Tindle stopped talking because Mrs. Tindle had sniffed and walked away.

Standing in the bedroom doorway, she said, "I don't understand all that double-talk. And I don't care. We mustn't waste electricity, that's all. If you want that machine turned on, stay there and use it. If you leave the room, you ought to turn it off. Same as a light."

Mr. Tindle closed the door, ate the last of his toast, and sat down in front of his computer. He opened the operating manual and tried to find out what to do. Through the window he saw a bolt of jagged blue lightning dance between sky and earth. Then came the thunder.

The manual didn't offer much help. Mr. Tindle tried a few things. He even booted up from scratch and found that his computer was undamaged. But the software he'd been running — a program for sorting data and searching out errors called Sarm-X — wouldn't work. Apparently, it had been damaged when his wife had crashed the system. And he had forgotten to make a backup copy of the disk.

For the first time since getting the computer on his birthday, Mr. Tindle decided to use the toll-free number given in the manual. It was listed right there, and the manual said that it would connect the call with Comp-U-Fix.

More lightning flashed as Mr. Tindle punched the number. There was

Mr. Tindle thought for a moment that he might be getting into something dangerous.

a pause, some crackling on the line, then a female voice answered.

"Comp-U-Fax," the voice said.

"I have a problem," Mr. Tindle said.

"Tell me," the voice said. This didn't sound like a typical telephone voice. Mr. Tindle spoke with hundreds of people on the telephone. Some were his co-workers. Others were clients of the department. Still others were telephone solicitors, merchants, even people taking surveys.

More than half of them were female, and Mr. Tindle thought that he had heard every possible variation of the human female voice. But he had never heard anything like this.

This voice had overtones and undertones to it that made the hair on the back of Mr. Tindle's neck rise. There was a kind of moist warmth to this voice. There was a breathiness, and an accent so slight that it defied identification but was still ineffably appealing.

Mr. Tindle told her.

All he really meant to tell her was about his problem with Sarm-X. He told her about that, and she listened, and encouraged him with little sounds and breaths and murmured syllables, and he found himself telling her a lot more than his problem with Sarm-X.

He found himself telling her about his job, which was oppressive; and about his boss Glauer, who was overbearing; and about his co-workers, who jibed at him; and about his home life, which was dull; and about his marriage, which was empty; and about his wife, who managed and manipulated and bullied him. Tonight she had gone into the computer room—his computer room—his one sanctum sanctorum—and had actually turned off his computer right in the middle of a run and ruined all his work and messed up his software.

Of course, that brought the conversation full circle, and the female voice on the toll-free line just listened, and murmured sympathetically, and told Mr. Tindle that she understood, she understood, she understood.

Mr. Tindle thought for a moment that he might be getting into something dangerous. After all, weren't there a hundred bad jokes about married men telling people that their wives didn't understand them? Some-

times it was a bartender; more often it was a woman. And the husband always wound up getting into trouble.

Always.

But this wasn't a real woman. This was just a voice on the other end of a toll-free line. She didn't even have a name.

"You have a modem there, don't you, Mr. Tindle?" the toll-free voice asked.

Mr. Tindle admitted that he did.

"Good," the voice said. "Just turn it on, give me your number, and Comp-U-Fax will send you some software to help you out."

Mr. Tindle said, "Comp-U-Fax?"

The voice said, "That's right."

Mr. Tindle said, "I thought the service was called Comp-U-Fix. As in, uh, fix something broken."

There was a laugh, amused but friendly. "Oh no. Comp-U-Fix is another service. I'm sure they're very good. But we're Comp-U-Fax. As in, ah, just the fax, ma'am." She laughed again, and Mr. Tindle actually joined in, softly.

Mr. Tindle gave her his number. "Thank you," he said, "thank you."

The voice said, "Comp-U-Fax is happy to help. *I'm* happy to help."

And the strange thing was, Mr. Tindle believed that she really was happy to have helped him. For the third time, he said, "Thank you."

"Anytime at all," the voice said. "Just call the Comp-U-Fax. I'm always here. Always. My name is Lily."

Mr. Tindle heard a click on the line.

His modem hummed into life, and a series of coding flashed through his computer, onto a blank disk.

Mr. Tindle logged off, booted down, shut off the machine, and climbed quietly into his bed so as not to waken Mrs. Tindle in the adjoining twin.

The next day, Mark Glauer called Mr. Tindle into his office. He laid a stack of computer printouts on his desk and said, "Albert, these are the latest figures for our section."

Mr. Tindle craned his neck so he could read the top printout. Mr. Glauer had laid the papers so they were right side up from his own side of the desk, of course. Mr. Tindle almost reached out and turned the papers around, but he drew back his hand, timidly, when he saw the look in Glauer's eyes.

Mr. Glauer always called Mr. Tindle by his first name, *Albert*, even though Glauer was easily fifteen years younger than Mr. Tindle. Albert Tindle didn't like that, and had often thought of asking Mr. Glauer to call him Mr. Tindle, but he had always held back from doing that, for fear of what Mr. Glauer would say.

Today Mr. Glauer was saying, "Your productivity and accuracy are both off, Albert. Look at this. Three errors in payment amounts to clients, two procedural errors, and two uses of incorrect standard phrases or paragraphs in your letters of notification. You're going to have to do a lot better than that, and fast, or we'll have to replace you."

Mr. Tindle swallowed and reached into his pocket for a handkerchief to wipe his brow with.

"What do you have to say for yourself, Albert?" Mr. Glauer asked.

"Well, the system is very complex. It's getting worse all the time, with all the new regulations they keep adding. And with the budget cuts, the personnel cuts. . . ."

"Can you do the work?"

"Yes. Of course. I mean, ah, yes, I can do the work."

Glauer pointed at the printouts. "But what about this?"

"How about the other workers in the section?" Mr. Tindle ran a finger around his collar, loosening his tie. Mr. Glauer stared, and Mr. Tindle pulled his tie back up. "What about Jack?" Mr. Tindle asked. "Or Larry, or Beans, or Eileen Tornqvist?" Eileen Tornqvist was a chubby brunette who was frequently called into Mr. Glauer's office.

Mr. Glauer shook his head. "You know I can't discuss other employees' work with you, Albert. That's a right-of-privacy matter. Besides, your work is the subject under discussion, not Jack's or Larry's or Beans's."

"Or Eileen's?" Mr. Tindle added.

Mr. Glauer got red in the face. "This meeting is going nowhere," he said. "I'm just going to tell you one time. Get those numbers back up where they belong, or get ready for a negative career-event hearing, Albert." He looked pointedly at his watch.

Mr. Tindle went back to his desk. En route he passed Eileen Tornqvist's desk. She was sipping a cup of coffee, watching activity in the office. As soon as Mr. Tindle was past, she got up and went into Mark Glauer's office, shutting the door behind her.

After work that night, Mr. Tindle did something he had never done

before. He stopped for a drink, alone, at the same bar his friends had taken him to for his birthday celebration. The bartender was a slim platinum blonde who wore a man's vest and bow tie.

Mr. Tindle ordered a beer. The bartender smiled when he gave her his order, and when she gave him his change after he paid for the beer, her hand touched his. A thrill shot through him. There was a bowl of pretzels on the bar, and he ate six of them, one after another, taking a small sip of beer after each bite of pretzel.

He was still thirsty when he finished his beer, probably because the pretzels were both dry and salty, a combination designed to induce thirst in bar customers. When Mr. Tindle ordered his second beer, the bartender smiled at him. She put the tall glass on the bar in front of him, and when he said, "Thank you," she said, "You're welcome." Mr. Tindle thought that her voice was beautiful. It reminded him of the voice on the toll-free Comp-U-Fax line. *Lily*. Of course, he had no idea what Lily looked like, but he imagined her as a slim platinum blonde a lot like the bartender.

He drank his second beer slowly, left a tip on the bar, and got home half an hour late. Mrs. Tindle was standing outside the front door, waiting for him. She demanded to know where he'd been.

He didn't answer.

She said, "All right, then. But you've missed your dinner. I put it down the disposal when you didn't come home."

He didn't mind. The pretzels and beer were still in his stomach, easing the tension created by his interview with Glauer, and he was actually feeling pretty good. He could do without his portion of limp vegetables and desultory dialogue.

He went into the computer room, closed the door behind him, and logged on. He booted up the disk that he'd made the previous evening, with the help of the toll-free number and his modem.

He expected it to be Sarm-X, but it was something else.

Mr. Tindle hadn't used the graphics package that came with his computer very much, but now a face appeared on the monitor screen. For a few seconds, it was very vague, the pixels dancing around in random patterns, but soon he realized that a clear face was forming. The face was that of a woman. The bone structure was slim, the complexion creamy, the eyebrows arched, and the hair a shimmering, platinum blonde. The woman's

eyes were an emerald green, and looked both kind and intelligent, sensuous — even eager — and yet innocent.

She looked, Mr. Tindle realized, a lot like the bartender who had sold him the two beers.

Mr. Tindle gave an involuntary gasp, started to say something, then stopped and looked behind him. The door of the computer room was closed. Mr. Tindle said, "Is this you?"

"Of course it's me," the face in the screen said. "Were you expecting Margaret Thatcher?"

"No!" Mr. Tindle blurted.

"Well, then," the face said. Her voice came from the computer, which Mr. Tindle knew contained an audio synthesizer chip. Considering, the voice was remarkably lifelike and warm. A lot like the voice on the computer toll-free line, Lily.

Mr. Tindle looked over his shoulder again. "Lily?" he asked softly.

"That's right," she nodded, her emerald eyes twinkling. "You look like you could use some cheering up, Mr. Tindle."

He felt himself blushing. "You can call me Albert," he said.

"All right," Lily said, "Albert. But please don't look so gloomy, Albert. Let's take a quiet walk. You'll feel better."

"I know," said Mr. Tindle, "but you're just a — a piece of software. You aren't real, are you?"

Lily looked crestfallen.

"Or are you?" Mr. Tindle asked.

"That isn't a very nice thing to say," Lily pouted.

"What isn't?"

"About me being just a piece of software. You're just a piece of flesh, so there!"

When she pouted, she was twice as adorable as she'd been before, Mr. Tindle decided, which was plenty adorable to start with.

"I'm just as real to me as you are to you," Lily said.

Mr. Tindle just sat watching her, wishing he could touch her hand, the way the bartender had touched his when she returned his change. "I'm sorry, Lily," Mr. Tindle said. "I wish I could go for a walk with you. But it's impossible. You're just a —" He stopped himself in time. "I mean, you're an electronic image, and I'm a living organism, and . . . and. . ." He stopped and just sat there.

Lily said, "Put your hand to the screen. That's right. Just touch your fingertips to mine." She held her hand up to the inside of the monitor, and Mr. Tindle held his hand up to the outside. He knew it was just a glass tube, but Lily's fingertips felt warm and soft. Mr. Tindle felt a thrill like the one he had felt with the bartender.

"Now, take your other hand and press the *execute* key," Lily said.

Mr. Tindle looked over his shoulder to make sure the door was still closed, and pressed the key.

He felt himself slide right into the monitor.

He was standing on a grassy hillside. Lily was beside him, her long hair glistening in the afternoon sunlight. The sky was a gorgeous deep blue. Two or three little fluffy clouds floated overhead. Mr. Tindle heard a murmuring brook nearby.

Lily took him by the hand and led him down the gentle hillside. There was indeed a stream, purling gently as it bubbled over some small rocks in its bed. There were trees along the brook, and a blanket was spread beneath one of them.

Lily led Mr. Tindle toward the blanket. She was wearing a softly flowing white gown that molded itself to her delicate but distinctly feminine figure. She was barefoot.

When they got to the blanket, Mr. Tindle saw that a picnic had been spread. There were sandwiches, fruit, and a pitcher of lemonade. Lily sat down on the blanket and patted a place beside her for Mr. Tindle. He sat down, and she put her hands gently on the sides of his head and massaged him. "There," she said, "isn't that better?"

He took one of her hands in both of his and started to say something, but a little brown and white puppy bounded from behind the tree and jumped on Lily's lap, making her laugh.

It was a wonderful picnic, a wonderful afternoon, and when it ended, Lily escorted Mr. Tindle back to the monitor screen and waited while he returned to his computer room. As he logged off the system, she blew him a kiss.

For once, Mr. Tindle slept happily and peacefully. The next morning he woke up and forced himself to go down to the Department of Social Assistance and work cases all day. Several times, Mr. Glauer strode past his desk, but Mr. Tindle kept his eyes down and just kept working. He did look up once when he heard Mr. Glauer's door slam. Eileen Tornqvist was

away from her desk. Mr. Tindle looked at the clock. The day seemed endless.

He didn't stop at the bar on his way home tonight, and when he got home — on time — he had to face a dinner of acorn squash and leek pudding. He wanted to head straight for his computer, but he didn't dare.

Mrs. Tindle asked him, during the meal, how things had gone at work.

Mr. Tindle said, "Not so bad."

"What!" Mrs. Tindle exclaimed.

Mr. Tindle almost choked on a forkful of leek pudding. "I mean, ah, all right. Things are all right. There's a lot of pressure, you know. Glauer's been after me, but I can handle him, I guess."

"That's what I thought," Mrs. Tindle said. "Albert, I have to talk to you about something. I had the most peculiar dream last night. Were you talking to that computer of yours?"

"As a matter of fact, I was," Mr. Tindle said. "I was trying out the audio synthesizer. It worked very well, I thought."

"Huh," Mrs. Tindle said. "It was very strange. I thought I heard your voice and then a woman's voice."

"That was the synthesizer," Mr. Tindle said. "That's all. Just the synthesizer."

"Can't it talk like a man?" Mrs. Tindle demanded.

"I don't know, dear. I, ah, I don't think it's adjustable. They just built it to sound like a woman's voice. But I'll look in the manual. Maybe I can change it."

Mr. Tindle had no intention of changing it.

He finished his acorn squash and leek pudding and said, "Well, I'm going to use my computer." He went into his computer room and sat down in the straight-backed chair. He picked up the telephone and punched the number that had got him Comp-U-Fax the night before.

An impersonal voice answered. "Compu-U-Fix. Please describe your problem briefly and leave a return number when you hear the tone."

Why had the number got Comp-U-Fax last night, and Comp-U-Fix tonight? Mr. Tindle thought, *It must have had something to do with the lightning.* He had got switched to — to what? He didn't know. There was nothing he could do about that now, so he switched on the machine, booted up the program that was not Sarm-X, and to his unmeasurable relief, Lily appeared on the monitor.

"Can I — may I come to see you again?" Mr. Tindle asked.

Lily laughed softly. "Of course you can. Whenever you want to! What would you like to do this time? No, don't tell me. Touch my fingertips and press the *execute* key first, and we'll talk it over together."

That night they went adventuring as pirates. Lily wore a black buccaneer's hat and a white satin shirt with baggy sleeves and a skirt cut off raggedly above her knees and a pair of soft boots with their floppy tops rolled down. They fought a battle and anchored near a tropical island, and Lily and Mr. Tindle rowed ashore with a crew of ruffians in striped shirts and white duck trousers and buried a chest full of jewels and made a map of where they had left it.

Then Mr. Tindle went back through the screen and logged off and booted down his computer and climbed quietly into bed without awakening Mrs. Tindle.

EVERY DAY for a week, Mr. Tindle suffered the agonies of Tantalus at the Department of Social Assistance waiting for quitting time to come. He would hurry home, make his escape from the dinner table as quickly as he could, and head for his computer. He never tried the toll-free line again. He just used the disk.

Lily was there every night.

One night he went back to college, tried out for the football team, and became the star quarterback. Lily was the captain of the cheerleaders squad, with bright yellow pom-poms and a heavy sweater with Mr. Tindle's letter on the chest and a short, pleated skirt and saddle shoes. After the game (Mr. Tindle scored the winning touchdown on a keeper play with no time left on the clock at all), they went to a victory dance.

Another night, Mr. Tindle was a jet fighter pilot, and Lily was a hostess at the Officer's Club. He'd flown nineteen missions. One more and he'd be rotated home. He wanted to take Lily with him, to marry her, to get as far away from the screaming engines and the blazing rockets and the exploding bombs of this war as he could. But he had to fly that twentieth mission, and he had a premonition about it. A terrible, terrible premonition.

Another night, Mr. Tindle and Lily were dining in the finest restaurant on Broadway. Mr. Tindle was wearing a black dinner jacket, and Lily was in a daringly low-cut gown of white silk. She wore an emerald necklace the same color as her eyes. Mr. Tindle had given it to her. Just as the

waiter brought their *canard l'orange flambé*, the captain arrived with a gold-plated telephone. "So sorry to interrupt, M'sieu Tindle. It is the White House. He insists on speaking to you at once. . . ."

Saturday morning, Mrs. Tindle insisted that Mr. Tindle take her for a long drive in the country. The day seemed to last for centuries, and they arrived home late at night, and at Mrs. Tindle's insistence, they both went straight to bed.

Mr. Tindle hoped to spend Sunday with his computer, but Mrs. Tindle announced that they were going to spend the day with her sister who lived on the other side of town with her husband, a life insurance salesman who always practiced his new pitches on Mr. Tindle. Once more they arrived home late and went straight to bed.

Monday morning the telephone on Mr. Tindle's desk at the Department of Social Assistance rang just before coffee break. Mr. Tindle picked it up and identified himself in the prescribed manner.

"Albert, this is Mr. Glauer. Please come into my office. You can bring your coffee with you."

Mr. Tindle detected two bad signs in Mark Glauer's message. First, he had said *please*. Second, he had told Mr. Tindle to bring his coffee with him.

Glauer had a fresh stack of computer printouts on his desk. He had highlighted Mr. Tindle's performance figures in yellow. He had a metallic pointer in his hand, and he tapped the stack of printouts and shook his head for fully thirty seconds before saying a word.

When he did speak, he said, "Albert, I have to tell you that I'm putting in a recommendation for a negative career event for you. Of course, it will mean less money and lowered personal status, and you can protest the action if you choose. But I wouldn't recommend that. These figures." He shook his head sadly. "These figures speak for themselves."

"But I've been trying," Mr. Tindle said. "And I don't think I'm the worst worker in this section, by any means. Why, I saw the stack of cases on Eileen's desk just this morning. Not that I have anything against her or want to say anything against another worker, but—"

"Albert!" Glauer cut him off. "I told you, if you wish to protest the recommendation, you know the proper procedure and form. Of course, if you do protest, you understand that you'll be suspended from all duties without pay while the protest is in process. At this time there's about an

eight-month wait for a first preliminary investigator's hearing, then, after the investigator prepares an initial preliminary report. . . ."

"Never mind," said Mr. Tindle. "Go ahead."

"Thank you, Albert," said Glauer. "For the time being, just continue your usual good work, please."

On his way back to his desk, Mr. Tindle passed Eileen Tornqvist's desk. She was eating a strawberry danish and talking on the phone. She followed him with her eyes as he walked past, grinning unpleasantly, then got up and strode into Mark Glauer's office.

After work, Larry Corcoran and Beans Harris stopped Mr. Tindle at the elevator.

"Heard you caught it from Glauer," Larry said.

"Lousy bum," Beans said. "He had me in there for an hour the other afternoon. I wish I had the guts to do something about it."

"Yeah," Larry said. "You and Walter Mitty, right?"

"Never mind," Beans said. "Let's get a drink."

Mr. Tindle said, "Thanks a lot, fellows, but it looks like rain again, and I want to get home. I mean, ah, I have to get home. My wife, she gets upset if I'm late."

"Well, call her," Beans said. "Right, Larry? Why doesn't Walter Mitty here just call the old lady and tell her he's having a drink with the boys and he'll be late? Right, Larry? How's about it, Mitty — I mean, Tindle?"

Mr. Tindle said, "Thanks a lot. Maybe some other time. But I'll walk you as far as the saloon."

They agreed to that, and as Larry and Beans disappeared inside the cool darkness, Mr. Tindle thought he caught just a glimpse of the petite, platinum blonde bartender. He even thought she waved to him, but the door swung shut, and he couldn't be sure.

Mrs. Tindle gave him a dinner of creamed corn and lyonnaise potatoes. She asked how work had gone, and instead of his usual formula, Mr. Tindle told her what had happened with Glauer.

"I spent all that money to buy you a computer so you could do better at your work, and you're getting a demotion?" she demanded.

"Larry and Beans aren't much better off," Mr. Tindle explained. "I don't know about Jack Donovan, but I'll bet he's in trouble, too. It's just this terrible system, and Glauer is a tyrant. An absolute tyrant."

"I'll just bet," Mrs. Tindle said.

"Well, I've finished my dinner, dear," Mr. Tindle said. He tilted his almost clean plate so she could see it. "I'll, ah, I want to try out some new software on the computer tonight. I mean, ah, I'll try not to be too noisy with the audio synthesizer, and bother you."

Mrs. Tindle stood up, glaring down at Mr. Tindle. "Make all the noise you want," she said. "Have a ball tonight, you miserable failure, because tomorrow that stupid machine goes back to the store for whatever credit they'll give me. I think I'm going to redecorate that room for my sewing corner."

Mr. Tindle trudged morosely to the computer room and shut the door behind him.

He booted up the machine and invoked Lily on the monitor. There were tears in Mr. Tindle's eyes, but through them, Lily's shimmering hair and creamy skin looked more beautiful than ever.

"Albert," she said, "what's the matter? You look so sad!"

"This is the last time we can be together," Mr. Tindle sobbed. "My wife is sending the computer back tomorrow. I'll never see you again."

Lily said, "Never mind. Come on, touch my fingers."

Once Mr. Tindle was inside the monitor (or wherever in virtual space Lily had awaited him), he took Lily in his arms and held her to him, crying into her gorgeous hair.

"Never mind, Albert," she said. "What kind of adventure would you like this time?"

"I don't care. I don't know. Oh Lily, what am I going to do?"

"How about the cowboy and the schoolmarm?" she asked.

Mr. Tindle shook his head.

"The boxer and the blind girl who needs the operation?"

"It's all just playing," Mr. Tindle said. "That's the real world. Out there." He pointed, vaguely, indicating the universe on the other side of the monitor screen. Wherever that was.

"No," Lily said. "Please, Albert. *This* is real. It's real! How about the gangster and the gun moll? How about the sailor and the stowaway girl? The nurse and the wounded soldier? Or spies? Or the pioneer couple! Please, Albert! I can be the harem girl, and you can be the pasha! Sorceress and sword-bearer! Please, Albert! Please stay with me! Please don't go back this time! Don't let her send away the computer, and you go back to that awful job, and I go back to — to — I go back to — I go back — go back —"

* * *

Mrs. Tindle opened the door of the computer room and peered in. The machine was running, its monitor screen a meaningless swirl of shapes and colors. "Albert?" Mrs. Tindle asked.

There was no answer.

"Albert?"

"Now where can that weakling have gone?" Mrs. Tindle grumbled to herself. "Albert!"

No answer.

Mrs. Tindle looked in the kitchen. She looked in the bathroom. She looked in the bedroom.

No Albert.

"Hmph!" she grunted. "It's going to rain, and that fool has gone out for a walk. Anything that happens will serve him right!"

She strode back into the computer room. The colors were still swirling on the monitor. "And I warned that man about wasting electricity. I warned him, and I warned him. I know he said you shouldn't just turn this thing off, but it's going back to the store tomorrow anyway, so it's his own fault if he loses anything that he's working on," she muttered.

She reached for the on/off switch and flipped it to off.

The swirling colors on the monitor screen faded to gray.



"Try as I may, they all look alike to me."

John Shirley wrote "Ticket to Heaven" (December 1987). His new story, he says, is about isolation, television and eco-collapse — and about a man who, after two hundred years, returns to a dying Earth.

Screens

By John Shirley

OUT THERE THE air is toxic; the land is nearly barren. The sky, even at noon, is the bruised color of mud at a city dump. The oozing plain has the sheen of a puddle coated with gasoline: a slick of diseased rainbows. It would eat away my skin if I were to step into it unprotected.

In here, it's safe, stainless, warm, shaded in amicable colors, with clean air and plenty of food and room to stroll.

I'm leaving here forever, and I'm going out there.

Into the murk that twitches, from time to time, with the clumsy movement of the subhumans. I'm going out there when I conclude this log. This is the final entry, my last tape record, my assessment of conditions on Earth at the date of my return.

I was born about 250 years ago, in Austin, Texas. I should have died around, I suppose, 140 years ago. I wish I had. If I hadn't married Freda, I would have.

* * *

I met Freda Gunderson at Solarsong Farm, in New Mexico. It was winter when we met, in 1999. More than two centuries ago. In the spring of that year, she asked me to marry her.

The desert, unfolding beyond the adobe walls of the Hackman hacienda grounds, was stippled soft orange and blue with cactus flowers. Near the balcony a mellow wind stirred one of the palms that Hackman had transplanted, so that it nodded like a drunk musician over a piano.

In nightgown and bathrobe, Freda and I were sitting at the second-floor terrace, overlooking the thoroughly irrigated garden, listening to the shuss of the sprinklers, the chatter of some desert bird who'd happened on this oasis and couldn't believe his luck.

Freda's red-gold hair and fair skin and blue eyes seemed an extension of the garden, to me; the arc of her full breasts in the filmy blue negligee was in thematic concordance with the great arc of the planet around us. We held hands and sipped tea, and all the trivial things we said seemed to brim over with the significance of intimacy. O.K., sure: I was in love.

And I was impressed with her. Freda was an arcological scientist, with master's degrees in botany, zoology, climatology. Most people are lucky to have one master's. Freda, at thirty-four, had three. But then, she'd graduated from high school at thirteen years old.

"It's good to see you happy this morning, Ricky," she said. "You're moody, most of the time." Her English was perfect, but her faint Swedish accent clung to her talk like some intoxicating ethnic perfume.

"I'm moody? I guess it's this place. It's a little too perfect here. Maybe a little too civilized for me. And Glass's people—" I glanced down at the glinting lozenge of the huge greenhouse, a hundred yards away, on the far side of the mansion's grounds. "—watch us all the time." You could see out from the greenhouse, but you couldn't see in. They had long-range surveillance cameras there, I knew. And they set watches on us when we walked about the grounds or went into town. "Daniel Glass is security paranoid."

"I know what you mean," she said diplomatically. "But I think you and Glass have more in common than you like to admit. You both love the Gaia. The natural world. Glass is a poet, too."

I winced, remembering Glass's poetry, recited after one of his Vibratory Sermons. Some ghastly Castenada-ish number about the Cactus Spirits Holding Up The Sky. Mawkish stuff. My analytical left-brained Freda wouldn't know good poetry if it nibbled her earlobe.

"Glass is a poet *technically*," I said. "But mostly what he is —" I hesitated, conscious that we were probably being recorded, and then plunged recklessly on, "—is a despot. A puppeteer. He's got Hackman in his pocket. He makes us sit on those New Age cushions while he preaches his New Age drivel — not only drivel but fifteen years outdated — about merging into a new society of 'vibratory harmony.' Preaching self-denial and screwing half the women in the project — The guy is a classic *cult leader*. Going to lead us all to the promised land in the sky."

"The Starsong colony is not Glass's idea. It was Dr. Branheimer's. And Papa's."

"That's the point, Freda." I let go of her hand and brushed my hair out of my eyes. My thick black hair had grown long and unruly, and I'd let my beard grow. Freda's father, Dr. Gunderson, didn't approve of my style. He wasn't enthusiastic about Freda's romance with a liberal arts major, anyway. "Glass has co-opted your father's ideas." I glanced to the east, where the sun had just risen over the big geodesic dome that was the Arcology Model, the self-sustaining ecological unit that the project wanted to replicate in the L-5 orbit. I could see one of the guards from the Glass family crossing the lawns between the dome and the hacienda-styled mansion that Hackman had given over to the project personnel. The guard was a long way off, but I could make out the glint of his tacky golden-sun medallion, with its green-glass center; I could imagine his tightly beatific smile, which never wavered as he checked in with the other guards on his 'fone, using code names like Laser and Aurora and Icemelt. Every one of them a former junkie or acidhead or near schizophrenic basket case that Glass had put back together in his own preferred reconstruction; making them utterly dedicated to the American-born guru.

"It's useless to complain about Glass. Hackman adores him. And the project is all Hackman's money and the money of Hackman's business associates. Half a billion dollars of it. Glass is part of the project to stay." She stood up, came around the table to sit by me, to take my hands. Something about the thought-out formalism of the act rang a warning bell in my head. "Ricky . . . while you were in Santa Fe, they made a decision. Glass has convinced them to move up the date of the final launch. We're going to the colony — I mean, the project is going. Soon. Next July. A little over a year." Stricken by the implications, I stared at her. She went on hastily, "You can go with us, Ricky."

"Come off it. I'd be dead weight. I'm a literary academic. Useless! Just another guy pawing through the Lake poets, and Whitman, Jeffers, Blake — and Yeats and Byron when they were feeling close to nature. *Those* are my people. I don't belong on a space colony. I'm not technophilic enough. And Glass would never tolerate me — he knows how I feel about him."

"You've helped this project a lot," she said earnestly, looking me in the eyes. "You wrote the best promotional material; it helped us get a lot of backers. You know a bit about environmental science, you're willing to work in the land — Dr. Branheimer said you were a lot of help in the greenhouse — and if you were to marry me, that would make it definite. They would *have* to let you come."

"Me. Sure . . . Freda. I don't want to go. I like the idea of the arcology in the sky. I like the chance to preserve a lot of plant species and animal species, away from the acid rains. But I don't want to *live* there. There's another way — you can stay here on Earth and work to save it. With me."

"I can't, darling. I just cannot. It would break my father's heart. And I have given my life to this. It is what my father and I always planned for. I have to go. If you love me, you'll go with me. We can come back sometime, Ricky. . . ."

But we never did.

We were married two days later. And two years later — it took them a year longer than they expected — we took the shuttle to the low-orbit station, and then took one of Hackman's new freighters to the Starsong colony in the L-5 orbit. The colony was, as I knew it would be, cramped, malodorous, gravitationally inconsistent, and an endless prescription for work that was never quite filled.

It was growing, though. Module by module, it expanded into the void. And after a year and a half of murderously tedious work, of enduring the claustrophobic stink of pressure suits, and after losing two men and a woman to faulty sealants in the EVA units . . . it was beginning to pay off. The colony's garden in space was thriving, and we were starting to manufacture the zero-g gimcracks that Hackman had hoped would make his money back for him. The pressure was easing. We decided to give ourselves a holiday. . . .

Glass didn't share our optimism. Glass, in fact, didn't share anything with us but what he had to. The rest of the time he holed up in his dorm

section with his toadies. He hadn't found paradise on the colony, and he sure as hell hadn't converted any new followers; worse, he'd had to actually work. And he was convinced the U.S. government — which had in fact tried to stop the project, claiming it was "uncontrollable and dangerous" — was out to get him. So when Hackman announced that he'd authorized a couple of senators to come up and check us out, Glass decided they were spies for the Pentagon. "The Pentagon wants to take us over so it can launch a first strike against the Soviet Union from here!" Glass raved. "They'll make the colony into an orbital missile base! They'll start World War III!"

We laughed at him.

So Glass simply appeared on the colony's TV monitors one morning, announcing that we had to make "the ultimate sacrifice" in order to "prevent the fascists from destroying life on Earth!"

Glass — forgive me — had cracked. To be fair, Earth was experiencing a vigorous political upheaval just then because of the Famine. . . . What was going on below us was enough to make anyone believe the end of the world was coming. Because it was.

You know about the Famine? Maybe you don't — no telling when anyone's going to hear this. The Famine came because. . . .

It came because in the twentieth century we thought we had plenty of time to deal with the air pollution problem. The atmosphere was vast, and we were cutting back on pollution. A little. But that thinking reckoned without synergistic reactions. It assumed that the wild variety of random chemicals released into the atmosphere would just sort of float around harmlessly. Stupid thinking. Some of them reacted with one another, and with other environmental factors. We should have seen it coming in the 1980s, when sulfur dioxide and other chemicals combined to form acid rain, began gnawing at the biosphere. . . .

But it was in the year 2000 that the sky fell apart.

The phenomenon hit the news media a week after Freda and I moved to the colony. It started with the catalyst. Terranoxin was a compound released into the air by a variety of industrial polluters. By itself, Terranoxin was not found to have a negative environmental impact; but a dissolution of the ozone layer had radically increased ultraviolet radiation. And Terranoxin, exposed to UV radiation, experienced a synergistic reaction that boosted it into a catalytic compound capable of runaway

instability. It formed a slick on plant surfaces, which forged a long chain of inert molecules binding oxygen and nitrogen into itself. Essentially, it ate the oxygen and nitrogen produced by living things. Carbon dioxide continued to be produced, but oxygen and nitrogen weren't. The reaction *began* small — but a catalyst will work through its medium and survive; a catalyst is capable of expanding exponentially. We had succeeded in making pollution that made pollution. Pollution that reproduced. The atmosphere's ability to absorb and filter pollution was overwhelmed — and quickly became irrelevant.

Oxygen and nitrogen were rapidly diminishing; the air was becoming unbreathable. Animals died; the food chain was shattered. People moved into narrower and narrower enclaves of breathable air. Great hurricanes of poisonous air swept over the land, smothering whole cities. The disruption turned cropland into dust bowls. Oxidation of ocean-dumped organic wastes and the pernicious action of pesticides worked with Terranoxin to destroy the oxygen-production capability of the seas. . . .

The world moved indoors. The urban domes were hastily thrown up — and many were almost as quickly torn down in the riots. Only the wealthy could afford a healthy diet, even in the U.S. And the consequent stress on the planet's social systems generated massive political strife. Sure, Glass: it was easy to be paranoid.

Glass — with his pinpoint pupils, his shaven head, his anorexia — had always been a paranoid, manipulating his followers with a masterful paternalism to close ranks around him. To be an extension of him, a buffer against the world.

So I can't say I was surprised when Glass opened the air locks and sabotaged the life-support seals.

I was doing a systems check on the escape pods when it happened. I was the only one near enough to use them. I heard the others screaming through the intercom. It was more horrible hearing it filtered. It was like they had a big mechanical hand clamped over their mouths. I thought: *Get into a pressure suit; find Freda.*

That's when I saw the suits. Slashed. Glass had been ready for this for a while.

The air was going. Understand that. *The air was going.* Freda was on the other side of the colony, working in the agribubble. The instruments told me it was one of the first sections to become a vacuum. She was a goner.

There was nothing I could do. I tell myself that all the time.

I was numb. Mechanically, I got into the escape pod. I set it for ejection, and I hit the switch that would put me in suspended animation until I was picked up and rescued.

As the gas put me under, I realized that the pod's ejection system had been sabotaged. It should have launched immediately. Eventually, the suspended animation would reach its limits. . . . So I was going to die, too. The guilt that had frozen my nerves melted away. I was flooded with relief. I was going to die with Freda, after all.

That was all right with me.

The suspension gas is supposed to preserve you for about three hundred years. Theoretically. Some people claim it'd work for only a few decades. No one had had a chance to test it out. I've got news for the skeptics.

I don't know why the pod ejected from the dead hulk of the colony, after more than two hundred years. Maybe a meteor strike, jarring some damaged mechanism into action. Or a long-term effect of radiation on the pod's launch systems. I don't know. But. . . .

After two hundred years the escape pod launched itself.

THEIR ORBITAL drones, maintaining the city's solar-power transmission stations, picked up the pod's signal and brought it down. More or less automatically. Nothing humane about it.

They put me down a few miles outside the city, where the airport used to be.

I didn't stir from the pod for a couple days. I'd used almost no measurable oxygen in suspension, so there was a few days' worth left. I spent them feeling like a warmed-over corpse, which was maybe what I was. I looked O.K. — but I had mental images of horror movies I'd seen as a kid. George Romero stuff about walking corpses. Rotting faces. That was my self-image for those two days.

Still, I sucked down the electrolytic solution, I ate the mash, and when I could make myself work, I repaired the pressure suits. Looking out the ports, I saw the acid ooze, the nightmare sky; could see that the atmosphere was pitting the pod's window glass. Maybe it wasn't Earth.

But when the weather cleared, I saw the pale, familiar face of the moon, like the dying face of a sick old man. And I saw the curving gleam of

the dome, rising smudged and segmented, at the horizon. Big as a mountain.

Kansas City.

A grief. A terrible grief that could not be encompassed by any poetry I could fashion. Beyond the sick grief and horror of a mother who has missed her child for days, and finds his body broken and rotted in her own well, and wonders how long he'd suffered down there. . . . Past the grief of a man who realizes that, through his own bumbling self-indulgence, he has infected his wife and newborn baby with AIDS. Even more than grief for Freda. Grief for a planet.

They hadn't found a way to contain or reverse the catalyst. Or if they did, it came too late.

Protected, for a while, by the pressure suit, I slogged through the bogs toward the dome. The sky was a ceiling of cobwebs. I remembered some lines from Gerard Manley Hopkins:

Generations have trod, have trod, have trod;

And all is seared with trade; bleared, smeared with toil;

*And wears man's smudge and shares man's smell: the soil
is bare now, nor can foot feel, being shod.*

And for all this, nature is never spent;

There lives the dearest freshness deep down things;

And though the last lights off the black West went

Oh, morning at the brown brink eastward springs —

But that was the bitterest drink at the wake: Hopkins was wrong. There would be no morning at the brown brink eastward. They had killed the world, finally. Or the world as I knew it. There was life here, of a sort, in the poisonous ooze. But it was life the way obscene doggerel on a bathroom wall is poetry.

And Freda was dead. I wanted to be dead, too.

Maybe it was curiosity. Maybe it was the faint hope that they might have preserved something green and something feathered under the dome. There might be many such areas of preservation; they might be, ironically, terraforming the Earth somewhere.

I used to have a fair torch for hope in me. It was down to a pilot

light on a grimy gas oven now. But it stilled burned.

The air lock was a man-high square panel flush with the dome. I cleaned away some of the gunk that clung to the lower part of the dome; read the blocky, flaking lettering: KANSAS CITY: ARLK 56.

I had radioed to them, and received no reply. Perhaps my radio was faulty, or they weren't monitoring those frequencies anymore, Or perhaps they didn't care if I died out there.

But the air lock opened, sliding creakily aside. I stepped into a featureless chamber of milky plastic walls. Startlingly pristine, after the bogs. The lock sealed behind me. Poisonous air drained away; breathable air hissed in. A green arrow flashed overhead. I unscrewed the helmet. Brassy smells. Plastic. Detergent.

A ball of warmth expanded in me. I was going to see someone alive! Maybe there'd be a welcoming committee and a big to-do. Fine. Let them paw me, gape at me, tear my clothing for souvenirs. It was all human contact. It was healthy life: it was a stinging reply to the flat gray hopelessness I'd crossed through on my way here. I needed human contact.

The smooth, waxy wall dilated an opening. Beyond was a long, empty hallway. They had to decontaminate me. I followed the hallway to its end: a shower room where a gray uniform hung on a peg.

I stripped and showered. I could smell a disinfectant in the water. Germ-killing ultraviolet lights came on in the ceiling as I dried. I dressed in the uniform: soft, durable paper of some kind. I felt it contract to conform to my shape as I zipped it up.

Padding down the hall in my soft gray slippers, I came to an elevator. The doors parted. Something within was examining me. It was a dull chrome sphere about two feet in diameter, with two knobs at opposite poles, either side. It rolled toward me like a beach ball. I had the distinct impression it was observing me.

Was this all that was left? The automatons of the place? Had the inhabitants died and left their robots to eternally maintain the empty city as a pointless monument to them?

I took a deep breath to calm myself. "I'm Richard Gale Mazursky. From the Starsong colony. I've been in suspended animation — according to the suspension computer in the escape unit, it was, uh, for more than two centuries. Look — can you take me to a . . . a person?"

It rolled back into the elevator. I accompanied it, and we rode silently down, many, many levels.

We arrived at another bland corridor, pale blue walls, the ceiling faintly glowing, plush white synthetic rug. Muzak was playing from somewhere; the Muzak was so homogenized I couldn't make out any definite tune. I accompanied the machine through an archway into a simple apartment. A room fifteen paces to a side, containing soft dun rectangular couches, slots in one wall, and a toilet. A large screen on the wall was lit, and on it, waiting, was a ?. A question mark. A big black one. Followed by an old photo of myself. It had been taken not long before I went up to the Starsong colony. It was a blowup of my small corner of a group photo, a publicity shot of the project planners. My expression was rueful, faintly impatient; beside me, all that was visible of Freda was her shoulder. My gut contracted, and I looked at the floor. "Yeah, that's me. Or was me."

I looked up at the screen as a picture of the colony appeared. Then an X was marked over it. And a question mark.

"Yeah. It's gone. I'm pretty sure I'm the only survivor. Was I right? Is it a couple of centuries since I went under?"

A + appeared on the screen. A plus. Positive. Meaning affirmative.

A picture of a food tube appeared on the screen, and then a question mark.

I wasn't hungry. Moths with razor wings jittered in my stomach. "No, thanks. Look, I mean it this time — *I want to see some people.*"

The silver ball rolled out the door behind me. There was no way to shut the door. It was only a slice out of the wall.

There they were. People. And a big, luminous gray-white screen. The screen filled half the wall and dominated the room. The other three walls were gentle pastels of blue, green, and yellow; everything I was to see was done in the same reductionistic simplicity. No decor, a few cushions. On these were four people with their backs to me.

They were dressed in bright colors, and their clothing was jumpsuit-styled like mine, but with no two cut precisely alike. The primary colors of their clothes bled as if tie-dyed, spreading out from the centerline of the body. It reminded me of a fad that had been going before Freda and I left Earth. Kirlian clothing. It responded to your bioelectric field, and changed colors, eventually set in color patterns that were supposed to be distinctive

to you. Their hairstyles were similar — sort of pixieish, sort of pageboyish, but each was faintly distinct.

Their eyes were fixed on the screen, rapt but placid, as if listening with great respect, though the image was soundless.

I was afraid to speak at first, to break the pervading sense of rapport. The ambience was fragile with it. I felt as if I were intruding on a church service.

What was I doing here? Maybe I was a bad memory, to these people.

But I needed them. The hunger in my hands made my fingers tremble for human touch; the hunger in my lips burned for conversation. "Uh — hi. I'm . . . excuse me, the robot brought me here . . . I'm Richard Mazursky."

No reaction. The chrome ball rolled out of the room, and I had the odd feeling I was left alone. The people on the couches hadn't moved, hadn't acknowledged my speech. Were they deaf? Were they —

I saw the girl blink. The young man with silky blond hair shifted his pose slightly.

Maybe I was being snubbed because I had violated some arcane rule of etiquette.

I looked at the screen. It was the only light source. A soft silvery light. For the first time I took in the image. Four rubbery gray cubes marching on a naked, gelatinous gray plain, one after the other. The cubes weren't exactly alike. One had a notch. Another had a crater in it. Another had a knob and a notch. . . . Approaching from the horizon's vanishing point, a procession of white rubber cones slid over the ground, five of them to the cube's four. The procession of cubes intersected the path of the cones. The cubes stopped as if pitched up against a brick wall; then the cones stopped. The cubes turned red, the cones green.

"They win," the woman said, in a pleasant voice. Not too toneless, not too expressive.

"Yes," I said, clearing my throat. "Evidently the, ah, cones have won. I think. Anyone care to instruct me in the significance of this? Is it, um, religious?"

I'd spoken extra loudly. No one so much as twitched.

I was shaking. "You people have a visitor from two centuries in the past every day? I mean, didn't your systems inform you? I just heard you speak English, and this *is* Kansas, Toto. . . . You wouldn't get that, I don't suppose. . . . Look — just direct me to the nearest park. Or greenhouse.

Something. I want to know that something *green* survived. I *need* to know that. . . ."

No response. I looked at the screen. The image had changed. I saw something that looked like a pincushion, waving its pins frantically. Nearby it, three spindles amoebically merged to become a larger spindle, birthing a sphere — it made my eyes hurt. When I looked away, I could still see the images for a moment, tenuous as flashbulb blurs.

I knelt beside the girl. "Can you hear me?" I whispered. No reaction. Chin propped in hands, she lay on her stomach, her legs closed and straight out behind her. A slightly Asiatic cast to her skin and eyes, the shape of her face. There was a flush in her cheeks, and her brown eyes were shining. She seemed healthy, alert. I wanted to touch her. Just to feel the life in her. To know that the world wasn't dead.

No, I told myself. You'd probably commit a solecism if you touched her. This could be a religious ritual of some kind.

She blinked, because it was time for her to blink. Her eyes followed the jockeying procession of cones, spheres, cusps, the shifts in color on the screen. The television images were reflected in perfect miniature in her eyes.

I reached out a hand to her cheek, my fingers trembling so near I could feel her body heat on the tips. I snatched the hand back.

Wait. I sat back, arms around upraised knees, and waited. Sometimes I watched the screen or the roiling shadows it threw on the bare walls. But the images, though simplistic, were disturbing. Their tenacity in repeated patterns of mobility, their gelatinous activity — something about it suggested living beings. I pressed my face into my knees, and waited.

Hours sifted by. When I became aware that the room was darkening, I looked up. The screen was blank except for four shivering green patterns running the width of the screen. Wavelength patterns. Up and down, up and down. EEGs, I supposed. The four strangers were asleep, lying on their cushions.

Swallowing my frustration, I stretched out on a cushion. After a while I slept. My dreams were blank.

The increased light from the screen woke me. The screen showed four snaking cylinders — each slightly distinct from the others — circling the rubbery gray-white pincushion, with its mass of outthrust prickles. It

seemed alien to the other objects. A departure in style.

A blue squeeze tube was lying on the rug beneath my vinyl couch. Without appetite. I sucked the faintly spicy mash, watching the others. They were eating, too, watching the screen. I disposed of my tube and sucked water from a hose in the wall, used the chemtoilet, and returned to my cushion. One of the cylinders was bending, wrinkling at the middle near the spiny button. As I watched, it pressed one of the pincushion's spines — which vanished. I felt a chill in my gut corresponding with the instant of the spine's disappearance.

O.K. The pincushion was me.

I moved to a corner of the room. The pincushion moved away from the cylinders. The people in the room hadn't moved, but their images had. So they controlled their images some other way. A group of eight-sided polyhedrons marched from the horizon toward the cylinders. . . .

I looked away from the screen. Reluctantly this time.

Hours passed. More games, if that's what they were, were played out on the screen. Someone said, "Entropy check" once. Otherwise the day was like the one before. And it passed. And I slept. And the next morning, it started again. Just the same.

I went for a walk. I found more rooms with more people in them, identically occupied. More or less like the others. Distinct from one another, but distinct as people who work in a shopping mall are: variations of a theme. They are generally of the same physical type — the type who used to sell deodorants and wine coolers and Diet Coke on TV.

It was the same in the other buildings. The streets were empty. I saw no children, no old people. The occupants of the apartments ignored me. Sometimes they did a little light maintenance, assisted by small robots like metal and plastic crustaceans; the little robots cleaned the dome, vacuumed floors, expunged fungus. Sometimes I caught the town's inhabitants doing light calisthenics, eating, using the toilets, even copulating in a mechanical sort of way. They didn't kiss when they did it. And they never took their eyes from the screen during all these activities.

I followed a young man as he trotted purposefully through the halls; as he watched a projection of a rubbery spiral followed by a pincushion. We rode the elevator to the roof. It was crowded with naked watchers sunning themselves, in silence, lying on their backs, eyes staring upward. The young man stripped and lay on his back with the others, soaking up the sunlight

and staring at the trapped sky. Overhead, gigantically magnified, projected holographically onto the air under the dome, were several dozen geometric forms circling one pincushion, performing the same shimmying, state-ly minuets of meaninglessness.

Sickened by claustrophobia, I looked away from the projection. The city stretched out as far as I could see on three sides. The great geodesic was lost in the faint blue mist of distance. The buildings were shaped like cones, like blocks, like spheres. Far away was one white pyramid. There were no trees, no birds, nothing growing. Nothing green anywhere, except on me: my uniform had begun to change color.

It had to be somewhere. They must have preserved *something*.

I went back down to the first inhabited room I'd seen. Things were unchanged there. I sat down, thinking, glancing at the screen now and then. Egg shapes, faintly distinct, circling a pincushion. One of them advanced toward the pincushion. "Fuck off," I muttered. It backed away. The encircling went on. The fuses of my patience were burning out.

After three hours of it, I advanced, physically, toward one of the women — the one with the vaguely Oriental features. I was distantly aware that on the screen the pincushion was advancing on one of the egg shapes. I stepped in between the woman and the screen, blocking her view.

"Look at me," I hissed. "I'm afraid I have to insist. I'm sorry if I'm screwing up a sacred ritual, but my sanity's at stake." She just stared. Looking toward me, not seeing me. I could see the screen images reproduced in her eyes, tiny and perfect. I looked down at myself. The picture was there, projected on the front of my jumpsuit. The pincushion was waving its spines at one of the egg shapes. . . .

I split. Fuming, I sprinted through the halls. I ran into apartments, shouting. I did everything short of violence to attract their attention. I shouted, "Fire! Earthquake!" Nothing. No reaction. I tugged their clothing, rearranged their bodies. They resisted a little, but not much. And when I forcibly turned their heads, a projection of the screen would follow their line of sight. If I woke them from sleep, a screen projection appeared instantly.

I shouted in their ears, I beat my chest; I bit through my skin and dripped blood on them. They cleaned away the blood, but they kept their eyes on the screen. I caressed them, embraced them, wept on them — I'm ashamed to admit I even considered rape. I was that angry. But I wasn't that far gone.

I walked out, headed for the street. And this time I found the monument at the very center of the city. It was in a city square, atop a three-hundred-foot pyramid, one seamless chunk composed of something like milk glass. I climbed a slippery stairway. At the five-foot-square space on top of the pyramid was an ancient Zenith color TV set, protected by a bubble of glass, plugged into an old-fashioned socket on the glassy floor. The tube faced me, and there was a single picture on the screen. . . . I watched for a while, and the picture on the old wooden-cased Zenith remained the same. A man's head and shoulders, a fixed image; he was smiling coyly, his gray-haired head tilted to the right, one eye closed in a wink. Across his chest were letters, yawing in a weakness of the horizontal hold, spelling out: BREWSTER REGINALD PHILBIN, MD, BSP, PHD.

It was a monument. "Must be hard to get parts," I muttered. Overhead, the enormous screen image in the concave interior face of the dome showed a pincushion approaching a 0. A zero.

Zero. One, two, and three of the spines on the pincushion vanished. I was left with a sinking feeling. When another spine vanished, I retreated.

I turned and fled down the stairs, skidding the last twenty.

IT HAD to be fast. The others knew what was happening, via the screens. Maybe via something else, too. I had to do it before they could stop me.

I picked her up. The woman I'd tried to talk to, the almost Oriental one. I slung her over my shoulder in a fireman's carry and turned to carry her away from the room. The others — never taking their eyes from the screen — moved as if to block me. But they were too slow. I darted out of the door, down the hall, grimacing at the effort. She wasn't heavy, until you tried to run with her. She wriggled silently on my shoulder; her eyes were locked on the projected miniature of the screen that followed us down the hall.

I heard no one in pursuit. I took the elevator down to the lowest level it would take me.

I carried her to a room I'd found the day before. It contained what I guessed was a heating and air-conditioning mechanism, a leviathan of metal pipes and chrome blocks and glass, humming and shooshing with the internal passage of air and power. The light was indirect, too sharp in some parts of the room, dim in others. A chain-link fence guarded the

mechanism; but the lock had been left open. People still made mistakes.

I went through the gate, and carried the wriggling girl to a dusty area enclosed by pipes fanning out from the machine like the arms of a Hindu god. I sat her down on the floor.

It worked. The projected image vanished. The metal leviathan — maybe its electric field — had blocked out the projection. The girl made a long, low wail of panicky disorientation. I was afraid she'd run for it, and I'd have to knock her down. And I didn't know if I could bring myself to do that. But she sat frozen, her head moving herky-jerky around, looking for guidance.

I took her face between my hands and turned her to look me in the eyes. "Can you see me now?"

She stared — then, like a wounded dog, she turned and snapped her jaws at my hand. Sank her teeth into the meat of my palm.

Jerking my hand away, swearing, I backed off. She looked at the floor, wild-eyed, a little blood running from the corner of her pretty mouth.

"I apologize to both of you," Dr. Philbin said.

He stepped up from behind, smiling sadly. Looking almost exactly like his TV image. Same suit. I couldn't see him clearly because of the dimness in this enclosure. But I thought he had the same expression as the face on the TV. I hadn't heard him, I supposed, because of the noise of the machine.

He was looking right at me. He was talking right to me.

I sagged back against a pipe. Something in my stomach drew in its claws, curled up, and went to sleep. *Someone was talking to me.*

"Why'd you make me go through all this before you showed up?" I asked.

"I overestimated you. Thought you would socialize more easily. I don't like to interfere, personally. . . . I suppose it's the researcher in me. It was something of an experiment. A bad one. I let this young woman down, and all the others, in making that estimation of you."

"I wasn't going to hurt the girl. I wanted to force her to communicate with me. To talk. Just talk. She was the lightest to carry. . . ."

"*Force her* is the operative phrase here. Imposing your social imperatives on our society by main force."

"Look — suppose you explain this place to me. And then we'll talk about morality."

He talked for a while, and I asked questions, and I got the gist of it.

Motivation, Philbin said, was ruled by the manipulation of archetypes in the subconscious. Something psychologists knew about analytically and Madison Avenue knew instinctively. The operation of the various substructures of the mind — the ego, the id, et al. — involved the use of a lexicon of symbols. Those symbols, and the archetypes they comprised, could be simplified and abstracted, purified for external concretization, and presented to the brain's centers of initiative directly — normally we react to symbols indirectly, through a long, slow process of filtering and selection. Before Philbin, conditioning was indirect, related to the use of experimental stereotypes: visual dramatizations of people enmeshed in desires for sex, success, recognition, approval. The conditioning dramatization sometimes came through television programming. The brain received and translated the imagery from social symbology to cerebral symbology. Social symbols became mathematic by way of the brain's eidetic translations.

Philbin cut out the middle man. He taught computer-controlled TV the language of the inner mind. "A language it took me forty years and the aid of dozens of researchers to learn." When applied with a totality of stimulus — the same style of imagery imposed from birth to death — absolute rapport was established. And absolute rapport meant absolute control.

"Television is mesmerizing," Philbin said. "People will turn and look at a TV even during an argument. I knew that there was something special going on there, something more than the eye being drawn to light and movement — and that it could be used constructively." He just stood there as he talked, in the same voice, motionless. I looked at the girl. She was staring at him. Twitching. The wound in my hand throbbed. Philbin went on, "I saw a new Dark Ages coming with the fall of the ecosystem, the destruction of the food chain. We needed an orderly society to survive. A method for training people, for teaching them to be part of a harmonious social environment. . . . When the atmosphere began its transformation, and the anaerobic organisms became the dominant life-forms, and the acid winds stripped the Earth . . . only Kansas City survived; it was the only *completely* environmentally shielded city at the time of the collapse. Home of the Philbin Institute. I was, ah, influential in the city — and when the emergency called for a new order, my system was implemented. We spent most of the first century refining the system — and developing

our survival technologies, our artificial food and air systems. . . . There simply was no room for any extraneous organisms, Mr. Mazursky. We had to give human beings priority. . . . In the second century our application of my social system was further refined, and evolved to . . . what you have seen. No materialized conflicts. All conflicts, all competition, all ego games and striving and desires, are acted out on the screen. We've trained our people to identify so thoroughly with the screen imagery that it's quite satisfying to them. They direct the screen with the output of their bioelectric fields, which the city's central computers are equipped to receive and interpret. There is individuality here — true individuality. They are aware of one another, of their little distinctions, in a peripheral sort of way. They gravitate together and apart very, very slowly, and react to one another physically as well as on the screen — but of course the screen imagery is uppermost. It is what they identify with, finally. . . ." He smiled. "You have that you-have-made-a-society-of-mindless-conformists look on your face, sir. Not at all. The city is maintained by the people, for the people, of the people, and every day everyone casts their vote. On the screens. A consensus is evolved and steps are taken. That's why we added roof-sunning last year. It was voted in."

"Come on. You're telling me they have free will? You don't use this system to control them?"

"They are influenced to accept certain fundamentals. Any society expects the same. And they're happy with it — these people don't have to suffer the hassles of reproducing, raising children. Or dying. Their consciousnesses do not die. When they begin to age, we clone them; their minds are cybernetically downloaded into the new brain, when the clone has matured."

"Rebirth in sterility. But they're —"

"Don't tell me they're not experiencing the joys and passions of life. They are. But they're trained to experience their feelings eidetically. On the screen. Ever seen two professional chess players go at it? They are motionless, concentrating — but don't imagine they aren't boiling with excitement inside. . . ."

"It's still *stasis*. Deciding on a new sunroof isn't progress. You could be cloning plants, animals — there must be samples somewhere, maybe in deep freeze, or. . . ."

"It would be hopeless. The planet *has* an ecology, sir. The new one,

based on new systems of chemical interaction with organic molecules. Anaerobic systems. It has overtaken the planet. Hopeless to try and reverse it. Anyway, why bother? If we succeeded, we'd generate disturbing social interference patterns — as you yourself have. 'If it ain't broken, don't fix it,' Mr. Mazursky."

"I see. The urban-village paradise is achieved, so don't disturb it. Look, Philbin — we were all on our way somewhere. We blew it, and derailed the train. But there was someplace we were intended to get to. You're stopping the last people who have the chance. And this kind of living just isn't intense enough to really satisfy anyone, Philbin. . . ."

"You sound like those quaint fellows from my childhood. Punk rockers, they were called."

"Punks?" I scowled. Nasty thought. I was a scholar of naturalist poetry. But then I shrugged. "Maybe it's sort of punk. Maybe a little punk is necessary from time to time."

"You're a fascist, Mazursky." He had dropped the "Mister." "You want to supplant our tribalism with your own. And to you, *I'm* a fascist."

He was right. It was relative. But. . . .

"I'm going to go with what used to be called poetic intuition," I said. "And fight you."

I decided I'd take him with us. With the girl and me. By force. I might need him as a hostage. I stepped in, and sliced an uppercut at the point of his jaw.

My fist sailed through his head. The image shimmied.

He was a hologram. "You don't think I'd risk myself here, do you, Mr. Mazursky?"

"An image. A TV image." I shook my head, feeling heavy and stupid. "I guess I wanted to believe you were there so badly I didn't really look very close. . . . Christ, you probably don't even look like that anymore. Cloned a few times yourself. . . ." I trembled with frustration. I'd wanted that contact. Wanted to see him *react* as I hit him.

"Now it's time for you to make a decision, Mr. Mazursky. You can give yourself over to retraining. Or you can go out there. And die."

"I'm going back to the escape pod. There's some air left. There are people out there . . . sort of. . . . I caught a glimpse yesterday, through the glass. . . ."

"They're not people as you know them, Mr. Mazursky. We haven't seen

them up close. But we're quite sure they're subhuman. They're not oxygen breathers, certainly. . . ."

"If I give in, I'll be seeing projections everywhere I go."

"Eventually. But everything you see has always been a projection — on the visual cortex. Your mind edits and distorts things. You see nothing really directly. This way we give you the symbols of the social world more directly."

"And I lose the bulk of my perceptions. I prefer the living world to your 'social' world, Philbin. I have made up my mind: I'm going. And I want to take the girl with me. You send some of your athletic couch potatoes to stop me — I'll kick in a few heads before they get me. It'll be a bad trade."

"Very well. She's already traumatized beyond recovery. Take her. Her designation is Curl. Go back out the way you came in."

And he blinked out.

Something tore loose in me, and it began to howl. "Come back here, Philbin! I'm not through with you! Listen, asshole — it was things like . . . like *this place* that put the goddamn planet into a doze till it fell apart! It was television; it was malls; it was the brain death of your urban villages, turning people inward, into entertainment games and away from the outer world — that's how it got poisoned and died and no one knew! It was like we were watching TV while the baby was poisoning itself in the kitchen! We got lost in our idiotic little distractions, and we projected all our problems onto little television dramatizations . . . and nothing seemed real! And when we realized it was real, it was too goddam late, Philbin! It was *television that killed the world, you smug bastard!*"

I had shouted myself hoarse. Fugued, drained, my voice echoed in the dull industrial spaces of the room, and was swallowed up, and lost. And Philbin didn't come back.

I had to drag Curl along at first. But after a few minutes she stopped yammering wordlessly, stopped gnashing her teeth and whimpering. She sank into a sort of ambulatory catatonia. Philbin didn't try to reclaim her. No screen projection followed us. We reached air lock 56. My suit was there, and in it was the tape-log I've been using to make this record. There was also a rather antique pressure suit for Curl — and a crude sled with a big tubular device that synthesized oxygen from carbon dioxide and carbon monoxide. A miniature of what the city used for its own air. And

there was a supply of "Food." Philbin was curious about me, it seemed, and what I might do out there if I survived awhile. He was still a scientist — perhaps more bored than he would admit.

The crossing to the pod was hard, because I got no help from Curl in pulling the sled. But the hardest part was getting her into the extra pressure suit. She came out of the catatonia, and bit me again.

Three days since the last entry. Things have happened. I'm not recording this in the escape pod. Oh, it was workable enough. I got the oxy-mix mechanism working in it.

I was thinking last night that maybe — almost certainly — it was wrong to drag Curl out here. She'd probably die out here with me. Die young. Like Freda. Who was I to say that death was better for Curl than life in the dome?

But it was hard to think about taking Curl back. Sometimes she looked me in the eye, seemed to try to understand me. And I managed to get her to take some food on the second day. And she bit me only once yesterday.

She can talk, when she wants to. Remembering speech from an earlier clone-sequence, probably. This morning she said some things. Starting with: "Are they alive?"

She was looking out the window. I stared at her — and then looked out the window and saw them. At first the way they looked made me sick.

The stuff was crawling over them with a life of its own. I assumed it was their skin. Slick, gray-purple oily gunk. Bubbles for their eyes.

I just stared, and waited, as they came in through the hatch. Two of them. They took off their heads. Peeled them off.

They were humans, under the oily stuff. Protective suits of some kind. Living suits, maybe. Bred for this. Creatures that live anaerobically, producing oxygen for the host who wears them. . . .

"When you first got here, we tried to catch up with you," the taller of the two men said, "to warn you away from that dome. They're complete assholes in there. But you moved too fast for us. We can't move very well in these scavenger suits."

"You coming back to the farm with us?" the shorter one said. He had mossy teeth and greasy, matted hair, and he was grimy. "Except for the Kansas City dome, we're pretty sure we're all there is. We only got a hundred square miles terraformed, but it's comin'. Long as our bubble

holds. . . . You coming with us? You hurry, you can make dinner. Corn on the cob. Fresh." He grinned at us.

"Are we going to go with them?" Curl asked me. She was sweating with the effort at this kind of communication. Squinting as if she had a headache. But sane.

"Yeah," I said. I took her hand. "I think we will."

She raised my hand to her lips. She didn't bite me.

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Inside Science Fiction

BY CHARLES PLATT

HOW TO LIVE FOREVER

WOULD YOU pay \$35,000 for immortality? This is not a hypothetical question. Everything that I am about to describe is currently available as a viable option.

Suppose you are days away from death, suffering an incurable disease. You are not wealthy, but by selling everything you own, you can raise \$35,000. If you use this money to pay for the treatment I'm advocating, you'll have a chance not only to be cured of your illness, but to live forever.

Admittedly, the treatment is risky. The chances of it working may be less than one per cent. But as you lie on your deathbed, what do you have to lose?

The treatment I am talking about is not a drug or a therapy. It is cryonic suspension. You pay your \$35,000 to be frozen immediately after you die, in the hope that you

may be brought back to life in the distant future.

Many people find this concept hard to take seriously, perhaps because it sounds like the stuff of 1950s horror movies. And yet, the facts speak for themselves:

- Animals have been partially frozen and revived successfully.
- Properly prepared tissue samples have been taken down to very low temperatures and later thawed with minimal cell damage.
- Our memories exist largely as chemical states in the brain. They may be preserved at low temperatures.
- Virtually no physical deterioration occurs if the body's temperature remains low enough.
- In perhaps two hundred years, it should surely be possible to cure most of the diseases that plague us today. And by then, there is a good chance that you will also be able to stop your biological clock at the age of your choice.

I admit that until recently, I was skeptical about cryonics myself. It

seemed to me that even if the procedure was feasible, there was no reason why anyone in the future would want to revive and cure a frozen, diseased body from the twentieth century.

But when I heard that writers Gregory Benford and Joe Haldeman had visited the Alcor Life Extension Foundation in Riverside, California, and had come away convinced that the people running it were highly capable and quite determined to fulfill their goals, I decided to go and see for myself.

Alcor is located in a little industrial park, a maze of streets in flat, dusty land adjoining the Riverside Freeway. The building is small and modern, of white-painted cinder blocks with a black glass facade. The front entrance turned out to be locked, and I saw no bell, so I knocked on the glass.

The man who let me in was tall, pale, and very, very quiet. He looked at me as if he had reason to be wary of strangers. When I explained who I was he introduced himself as Mike Perry, a computer scientist, and showed me to a little waiting area where I could browse through back issues of *Cryonics* magazine.

I noticed some framed photographs displayed prominently on the wall. One was of a person in uniform; another was a blurry print

of a woman walking in a desert landscape. "Who are they?" I asked.

"Oh." Perry smiled shyly. "They're some of our — our people." I sensed a protective pride in the way he said it, and I realized from his tone that these were men and women who had been placed here in cryonic suspension.

I tried to imagine the lives they had led and the factors that had prompted them to be frozen after death. I pictured them in icy limbo somewhere in this building, waiting for a day when they might return. This didn't seem macabre, and it didn't seem silly. It felt very serious indeed.

Alcor's president, Mike Darwin, arrived a few minutes later to show me around the facility and answer all my questions. He was in his thirties, slim and energetic, with the impatient intelligence of a man who I imagined must spend a lot of his time coaxing people in small steps toward logical conclusions that to him seemed self-evident.

Darwin began by describing in detail the process of placing someone in suspension. As soon as possible after death, the temperature of the body is gradually lowered and the patient is given a transfusion of glycerol (a nontoxic compound similar to antifreeze). This replaces water in the tissues, to prevent cell membranes from rup-

turing when freezing occurs.

If you die in a hospital whose authorities are cooperative, the glycerol transfusion can be done there. If you die in the outside world — in a car crash, for example — Alcor has a specially modified ambulance that is constantly on call. Either way, you will ultimately be taken to Alcor's own operating theater for the main part of the procedure.

Darwin showed me the facilities. There was a slightly low-rent feel to the place, but I was impressed by the expertise, the meticulousness, the sophisticated equipment, and the qualifications of the staff, who include a surgeon and a researcher formerly affiliated with UCLA.

Once your body has been made ready for storage, it's immersed in a stainless-steel dewar of liquid nitrogen. Darwin showed me these tanks in an adjoining room. Each was about ten feet high and two feet in diameter. "Do you want to see inside?" he asked.

Having come this far, I was not about to refuse. We climbed a wooden ladder and he disabled the alarm system, then removed the lid from the top of one of the gleaming cylinders. Cold white mist billowed up as some of the liquid nitrogen vaporized. I peered down into the tank. There, below the surface, I

could barely discern something — someone — in suspension.

"Each of these vessels can hold two whole bodies," he explained, locking it shut again. "And over here, in each of these vaults, there's room for nine neuros."

Neuro is a cryonic euphemism. Speaking bluntly, it means *severed head*. This sounds ghoulish, but it's entirely logical. If future medical science is capable of reviving a dead person, it should certainly be able to regrow or clone a new human body. Since one's identity exists primarily in the brain, it seems pointless to devote money and resources to preserving the body as well. So Alcor offers a choice: for \$100,000 you can have your whole body preserved, or for \$35,000 you can store your head alone.

Some people find this a bit hard to take. Even though the only patients in Alcor's operating theater are inanimate ones, the idea of surgeons sawing off heads on a back street in a little industrial park seems odd, to say the least. Doesn't anyone object to this kind of thing?

Early in 1988, the local coroner did just that. He demanded an autopsy to determine the cause of death of Dora Kent, one of Alcor's members, whose head had been placed in suspension. Alcor surrendered the body, but refused to give up the head. As their attorney put

it, "Dora Kent didn't go through all this crap just to have her brain end up in a blender."

Local authorities moved in. Police took staff members away in handcuffs, equipment was confiscated, inspectors arrived looking for fire and safety violations, and numerous other forms of official harassment were brought to bear. But when all was said and done, no charges were brought. Alcor has scrupulously complied with all relevant regulations. If people request that their remains be specially treated and frozen, as opposed to being buried or burned, they have every right to do so. Dora Kent's head remains in suspension, untouched by an autopsy that would have robbed her of the chance she sought to cheat death. And after a long, fierce battle, Alcor remains in business.

Other cryonic organizations, scared of the publicity, stopped doing neurosuspensions; but Alcor continues to offer the option. It is, after all, the only way to make freezing available to people who have limited funds.

AFTER TOURING the building, I went with Darwin to an improvised office beside banks of steel shelves storing surplus equipment and supplies. We sat on thrift-shop chairs at a bat-

tered conference table, and talked about the finances of the foundation.

Alcor is the largest organization of its kind, but in this field, "large" is a relative term. It has just over a hundred people signed up to be frozen after death, and eight who are already in suspension. It survives using voluntary labor, ingenuity, and a considerable amount of dedication.

For \$20 a year you can become an associate member, receiving their monthly *Cryonics* magazine. Suspension membership costs \$200 a year and requires you to make arrangements for payment of the \$35,000 or \$100,000 fee after you die. One way to do this is by taking out a life insurance policy naming Alcor as the beneficiary. Most of Alcor's members are not rich; this is how they afford their chance at immortality.

But how good a chance can this really be?

Darwin referred me to *The Engines of Creation* by Eric Drexler, a book that proposes "molecular technology" as probably the most significant, broad-ranging technique in the next century. Imagine tiny machines, each consisting of a mere handful of molecules. Some are programmed to reproduce themselves, others to perform simple repetitive tasks. Injected into the body, they

swarm through its cells like an army of microscopic maintenance robots, patching broken membranes and cleaning out capillaries.

There are great challenges and dangers associated with molecular technology. But its self-replicating nature should mean that if it ever exists at all, it will become widely available and cheap, much as microchips became affordable just a couple of decades after they were invented. Thus, the process of resuscitation may eventually be accomplished at minimal expense. Alcor looks ahead to the day when it can use this capability to revive the people in its care — assuming, of course, that the foundation is still in business a century or two hence.

Darwin is blunt and realistic about this. The chances of cheating death may indeed be small. On the other hand, as he points out, if you allow your body to be buried or cremated, your chances are less than small. They're zero.

* * *

Cryonics is a science in its infancy. Medical authorities do not yet consider it reputable. As a result, there is literally more money available for studying psychic phenomena than for research into freezing human tissue. Mike Darwin is frank about the limitations, and frustrated by the lack of funds to learn more.

He did introduce me, however, to a dog that had been frozen (to zero degrees Celsius) and revived without apparent loss of memory or dysfunction. Looking at this German shepherd, alert and full of life, gave me a sense of hope. One day, I do believe, death will no longer be a specter that we all live under. And it may be possible, even now, to pursue every science-fiction writer's dream; to see the future, and live forever.

The Alcor Life Extension Foundation is at 12327 Doherty Street, Riverside, CA 92503. If you write to them, they'll be happy to send you more information.



Mr. Foster's latest story features a marvelous character named Mad Amos Malone, who may be crazier than a bedbug, only maybe not. In this tale, Malone and a jaded British hunter go after the most exotic game of all . . .

Jackalope

By Alan Dean Foster

I'M SORRY, GENTLEMEN, but there is nothing left to tempt me. I've killed everything there is to be killed.

Lord Guy Ruxton extracted an imported Havana cigar from a jacket pocket, utilized an engraved Italian cutter to snip the end, and turned slightly to his left so Manners could light it for him. As he puffed it to life, there was a subtle but unmistakable shifting of bodies in the saloon as cardplayers and drinkers leaned in his direction in vain but hopeful attempt to partake, however infinitesimally, of that expensive aromatic smoke which would forever lie beyond their modest means.

Though they shared the best table in the house with him, Ruxton's audience of Butte's leading citizens was equally appreciative, if not nearly so obvious. Being connoisseurs of silver, they admired the cigar cutter as much as the smoke. The town of Butte would not exist save for silver.

Ruxton was a *rara avis* in Montana Territory: a wide-ranging world traveler and hunter of big game. A fine orator, he held his after-dinner

companions spellbound with his tales of tracking exotic animals to the far corners of the earth. Miners and bankers alike were enthralled by stories of stalking tiger in British India, oryx in Arabia, and all manner of dangerous game in Darkest Africa. Ruxton was only mildly condescending to the colonials, and they responded in kind. Still, it was clear he was bored. He took a sip of the best scotch Butte had to offer.

"I think the time has come for me to pack it all in, gentlemen, and retire to my estate in Hampshire. You see, there is nothing left for me to hunt. The walls of my trophy room will see no further additions because there is nothing further to add. I lament the end of excitement!"

Silas Hooten had founded the town's first bank and watched it grow along with the production of silver. Now he smiled and put down his drink.

"If it's excitement you crave, why not have a go at hunting buffalo in Sioux Territory?"

Ruxton regarded his cigar rather than the banker. "Because there is nothing to hunt in the eastern portion of your benighted territory *except* buffalo, and I have found that animal a singularly uninspiring quarry, though I have hunted it with bow and arrow in the fashion of the savages as well as with rifle. The presence of Red Hostiles in the vicinity does not alter the object of the hunt." He sighed tiredly.

"No, gentlemen. I have sampled the best of your cuisine, your scenery, and your women. Now I fear it is time I return permanently to England. I do not fault your bucolic hospitality. America was the only land remaining to be hunted. That I have done. Would that there were more truth and less wind to some of the tales I have heard of this country."

"Jackalope."

Ruxton frowned, peered past Hooten. "I beg your pardon, sir?" His drinking companions turned to stare with him.

"Jackalope, I said. Got ears, ain'tcha?"

The mouth that had given birth to the word was hidden by a massive buckskin-clad back. The individual seated at the bar looked like a chunk of dark granite blasted from the depths of one of the town's mines, hauled in by mine trolley and set up on a stool like some Druidic monolith. A hat fashioned of an unidentifiable golden fur crowned the huge head. Black curly hair lightly flecked with white tumbled in an undisciplined waterfall from beneath the headgear.

As miners and bankers and visiting nobility looked on, the man turned like an Egyptian statue come to life. Deep-sunk black eyes regarded them from beneath Assyrian brows. The hair at the back was matched in front by a dense beard that might have been forged of wrought-iron wire. Two thick, gnarled fingers supported a beer mug full of whiskey.

"I was sayin', sir, bein' unable to avoid overhearin' part of your conversation, that it might be you've never hunted for jackalope."

"Yes. Well." Ruxton noted that his companions were now smiling and chuckling softly among themselves. He lowered his voice. "Who is this extremely large chap, and what is he nattering on about?"

"Malone." Orin Waxman ran the biggest general store in town. "Amos Malone."

"*Mad* Amos Malone." Hooten pointed a finger at the side of his head. "The man's crazier than a bedbug, but it's a rare soul who'll say so to his face."

"Looking upon him, I can understand that. You say he's mad?" Several of the men nodded. "What's this 'jackalope' thing he's on about?"

Waxman shook his head, grinning. "There is no such animal. Somebody somewhere faked one up, and it's turned into a long-standing gag for foolin' easterners. No offense, Your Lordship. Someone will shoot a jack-rabbit and a small deer or antelope. They'll take both to a good taxidermist with a sense of humor, and he'll stick the deer antlers on the rabbit's head. And there's your jackalope."

"I see. It is quite imaginary? You're positive of that?"

The men eyed one another uncertainly, left it to Hooten to reply. "Of course it is, sir. The mountain man's just having a little joke at your expense."

"A good joke, is it? At my expense?" Ruxton's eyes glittered as he turned back to the bar. "Here now, my good fellow. I am intrigued by your comment. Do come and join us."

Mutters of disbelief and distress came from Ruxton's companions, but none dared object when Malone lurched over to assume the lone empty chair at the table. Such men were not famed for their hygiene. Waxman and the others were relieved to discover that Malone, at least, seemed to have bathed some time in the not too distant past.

Obviously enjoying himself hugely, Ruxton swept a hand toward his hosts. "These gentlemen insist vehemently that there is no such creature

as the one you speak of. I interpret that to mean they are calling you a liar, sir."

Waxman choked on his liquor, while Hooten's eyes widened in horror. Malone simply eyed them intently for a long moment, then sipped at his tenth of whiskey. The resultant sighs of relief were inaudible.

"None of 'em knows enough to call me a liar. I ain't insulted by the denials of the ignorant."

His response delighted Ruxton. "Sir, you are a man of surprises! For the moment I intend to leave aside the matter of your sanity. As you overheard, I am something of a sportsman."

"Your claim, not mine."

Ruxton bristled slightly at that, but restrained himself. "True enough. You claim I have not hunted this creature you call a jackalope. These good citizens dispute the assertion that it exists. I would put you and them to the test, sir." He made sure he met Malone's gaze evenly. "If you are game."

"I ain't, but the jackalope is."

Ruxton hesitated a moment, then burst out laughing when he was sure. "Upon my word! A rustic with wit. I like you, sir. 'Pon my word I do!" He stubbed out his half-finished cigar and tossed it over his shoulder, ignoring the near riot that followed its descending trajectory as a dozen men scrambled for possession of the butt.

"I would engage you, Mr. Malone, to direct me to the place where I might find such an animal and add it to my collection. I will pay you well, in gold, to serve as my guide in such a venture. Our bargain will be that should we find nothing except fast talk, all expenses will be borne by you."

Malone considered, seeing the doubt in the others' faces. Then he gently set down his mug. "Done. It'll be you and me alone, though. I don't like travelin' with a crowd." He glanced at Ruxton's valet. "Especially slaves."

The valet stiffened. Ruxton only smiled. "Manners is a valued member of my household staff, not a slave. However, it shall be as you wish. I will accompany you alone. Where are we going, sir, or is it to remain a mysterious secret?" He was clearly amused.

Malone turned and nodded westward. "Up thataway. Into the Bitterroots."

"The Bitterroots!" Hooten half-rose out of his seat. "Lord Ruxton, I implore you to reconsider this foolishness. The veracity of this — gentle-

man — is to be doubted. His reputation is eccentric in the extreme. There's nothing up in those mountains except Nez Percé and Blackfeet. You'll find only trouble and danger in that range, not nonexistent game!"

"Come now, gentlemen. Are you again openly disputing the good Mr. Malone's word?" Waxman's lower lip trembled, but, like the others, he said no more. "Then it is agreed. When do we depart, Mr. Malone?"

"Morning'd be fine with me. We'll be gone a few weeks. Take what you need, but it's best to travel light."

"As you say, sir. I understand the weather is good this time of year. I am looking forward to our excursion."

They headed northwest out of town despite the last-minute pleas of Hooten and his friends. The death of so distinguished a visitor to their territory would not be the best of publicity for a growing community, and they feared it; yes, they did. Ruxton's valet tried to reassure them.

"Lord Ruxton, gentlemen, is used to the life of the camp and the trail. He had been in difficult circumstances many times and has always emerged unscathed. He is a crack shot and an athlete, a man who relishes danger and its challenges. Your concern does him an injustice. No harm will befall him. If you must worry about someone, concern yourselves with this crude Malone person."

"Mad Amos is no genius, but he ain't dumb, neither," said one of the men who'd gathered on the porch of the hotel to bid the hunters farewell. "Ain't nobody never been able to figure him out nowadays."

"I assure you," Manners continued, "Lord Ruxton is more than a match for any situation this lout can place him in."

"Oh, I wasn't worried about how your boss is going to get on with Malone," said the man who'd spoken. "I was wondering how he was going to cope with the Rockies."

Once they left town, they commenced a steady climb into mountains as serene and lovely as any in the world. They reminded Ruxton of the Alps, without the spas and fine hotels and other amenities of that ancient region. By way of compensation, there was a freshness in the air, a newness not to be found at the watering holes of the wealthy that dotted the continent. Ruxton's packhorse trailed behind Malone's.

"That is an unusual animal you ride, sir." He nodded at Malone's mount.

The mountain man spoke without looking at his guest. "Useless has been called plenty of names, Lord. Most of 'em less complimentary than that."

The animal Malone called Useless was black except for patches of white at tail and fetlocks. A single white ring encircled one eye, giving the horse the aspect of a permanent squint. He was a cross among half a dozen breeds. For reasons Malone chose not to elaborate on, a heavy leather patch was affixed permanently to the animal's forehead.

Have to attend to that again soon, he mused. He didn't worry about it out in the backcountry, but it was just the sort of thing to provoke consternation among simple city folk.

The horse snorted, just to let the two riders know he was listening.

"Magnificent country, your West. Do you think we might encounter some Red Indians, as Mr. Hooten seemed to fear?"

"Only if they're in the mood for company. Nobody sees the Blackfeet unless they want to be seen, and sometimes the Nez Percé don't even see each other. I don't anticipate any trouble, if that's what you mean. I've an understandin' with the folks hereabouts. If we do meet up with any, you keep your mouth shut and let me do the talkin'. I ain't sure how they'd take you."

"As you wish, Mr. Malone. How long before," he bent to hide a smile, "we stand to encounter one of your jackalopes?"

"Hard to say. They're shy critters, and there seem to be fewer of 'em each year. Seems to be as folks start movin' into this part of the world, certain critters start movin' out."

"Indeed? How inconvenient. Well, I am in no hurry. I am enjoying our excursion immensely. I took the liberty of stocking up on the finest victuals your community could provide. I shall enjoy dining au camp at your expense, Mr. Malone."

"Ain't my expense unless we don't git you a jackalope, Lord."

"Of course. I am remiss."

"Don't know about that, but you're sure as hell premature."

Many days went by without them encountering evidence of any other humans of any color. Malone seemed content to lead ever deeper into the mountains. Snow-clad peaks soared ten thousand feet overhead as they picked their way across a rocky slope above a wide, white-flecked river. Ruxton marveled at Malone's ability to find a path where none was visible. The man was a fine tracker, like many of the primitives Ruxton had engaged in other lands.

A whole herd of the utterly impossible creatures were feeding in a small grassy meadow.

He was watching his guide carefully now. Perhaps robbery had been his motive all along in agreeing to this trek. Ruxton had considered the possibility back in the saloon, but, instead of deterring him, it only added spice to an expedition such as this. He lived for such excitement. If thuggery was indeed in the mountain man's plans, he was in for a surprise. Ruxton had dealt with drunken cossacks and silent-footed dacoits. Despite Malone's size, Ruxton knew that in the event of a fight, it would be an Englishman who returned to tell the tale.

He was careful to sleep on the opposite side of their campfire, Colt pistol at his side, the intricately carved pepperbox snug in its special holster inside his boot. Malone would not surprise him in the middle of the night.

So he was more than mildly shocked when he found himself being shaken awake the following morning. His hand lunged for the Colt, paused when he saw that Malone was looking not at him but past him.

"Whisper," Malone instructed him, "and then speak softer than that."

"What is it?" Ruxton was up quickly, pulling on his jacket. "Savages?" Malone shook his head.

"What then?" Chilled fingers buttoned the coat. Even in late spring, dawn was cold in these mountains.

"What you come fer, Lord."

Ruxton's hands stopped. "Pardon, Mr. Malone?"

"Jackalopes, you damn idjit! You want that trophy or not?"

Ruxton gaped at him, then hurriedly resumed his dressing.

Malone led him away from camp. They crossed two small ridges before surmounting one slightly higher. The roar of the river masked their climb.

Clutching his .30=30, Ruxton peered over the crest of the ridge. There was no need for Malone to remind him to keep his voice down, because he had no words for what he was seeing.

Not one, not two, but a whole herd of the utterly impossible creatures were feeding and frolicking in a small grassy meadow. They were bigger than he would have imagined, bigger than the largest jackrabbits he'd shot in New Mexico. They nibbled contentedly at the grass or preened them-

selves or lay on their sides soaking up the early-morning sun. Several pairs of young males were play-fighting. They would eye each other intently, then drop their heads and leap like rutting rams. Heads made contact six feet above the ground. Antlers locked and clacked loudly before the combatants separated, tumbled back to earth, and gathered themselves for another charge.

"I don't believe it," he mumbled under his breath.

Malone was impatient. "I don't care whether you believe it or not, Lord, but I never did cotton to havin' my word doubted. I reckon we won't be hearin' no more of such nonsense. You think you can shoot one, or you want me to do it fer you?"

"What? Oh yes."

Ruxton checked his weapon. He'd come to Montana in search of trophies, had gone along with Malone for the excitement of the wager, and now found himself in the position of obtaining far more than he'd sought. This expedition would yield much more. There would be articles in *The Times*, scientific honors, perhaps a special room in the British Museum.

Oh, he would take care to acknowledge Malone as his guide to this wonder. That would be proper. But recognition as discoverer would mean nothing to such a simple soul. The honor would be wasted on him. Ruxton therefore would graciously relieve him of the burdens it would entail.

Though nervous, he knew he could not miss. Not at this range. His valet had not exaggerated his master's skill with a rifle. Ruxton settled on the biggest buck in the herd, a magnificent ten-pointer. It was squatting off to one side, grazing contentedly. Sorry, old fellow, he thought as he squeezed the trigger.

The gun's report echoed noisily up the canyon. The buck screamed once as it jumped convulsively. By the time it hit the ground, it was dead, shot cleanly through the heart. Like fleas exploding from an old mattress, the rest of the herd vanished in seconds.

But the dead buck jackalope did not vanish like a character from *Through the Looking-Glass*. It was real. Malone followed behind as the excited Ruxton scrambled over the rocks toward it.

He lifted it triumphantly by the antlers. It was heavy, at least twenty pounds. This was not some clever fake conceived at great expense to deceive him.

"Mr. Malone," he told the mountain man when he finally arrived, "I am

sorry for doubting your word. Oh, I confess to being as skeptical as your fellow citizens. I thought I would be the one to have the good laugh. I apologize profusely."

"No need to apologize, Lord. Leastwise you had the guts to back up your words. And there's worse things to go a-huntin' fer than a good laugh. Come on now and let's be gettin' away from here."

"Why the rush? I thought I might have a shot at another one."

"I promised you one trophy. You bagged it, and a big one at that." He was scanning the canyon walls as he spoke. "Now it's time you and I were makin' tracks."

Ruxton frowned, joined Malone in studying river and enclosing canyon. "Why? Surely we're in no danger here. Or do you fear Indians may have heard my shot?"

"Nope. Ain't worried about Indians. Ain't none in this place. They won't come down this canyon."

"Well, then, what troubles you? Pumas, perhaps, or a bear?"

"Not them, neither."

Ruxton sighed, not wishing to spoil this historic moment with an argument. "I warn you, sir, I have little patience for linguistic obfuscation."

"Tell me somethin', Lord. What kind of critter do you think would be fast enough and strong enough to catch somethin' like a jackalope?"

"Why, I don't know. I should imagine that the usual predators manage to—" But Malone had turned and was already taking long strides back toward camp. Ruxton followed, too elated by his kill to remain angry with his irritating guide.

Having put the incident completely out of his mind, he was furious when Malone woke him in the middle of the night. He could see the mountain man outlined by the glow of the dying campfire.

"Sir, I have no idea what your absurd intention may be in disturbing me thus, but I am accustomed to enjoying a full night's rest, and I—"

"Shut up."

"Now listen to me, my good fellow, if you —"

He went silent as the muzzle of an enormous rifle tilted toward him. "I told you to shut up, Lord. If you do, maybe I can keep you alive."

Ruxton had plenty more to say, but forced himself to keep quiet so that Malone could explain. That was when he noticed that his guide was staring anxiously at the sky.

A diadem of stars flattered a half-moon that turned the granite slopes around them the color of used steel. Far below, the unnamed river ran nervously toward the distant Missouri. Ruxton was about to mention the possibility of marauding Indians once again, when something man-sized filled his field of vision. Its eyes were like saucers of molten lead. He let out a scream and fell backward even as the gun in Malone's hands thundered. Something like a Malay dirk cut his shoulder, slicing through his shirt. Then all was still.

He lay panting as Malone rushed to reload the buffalo gun. Putting a hand to his shoulder, Ruxton found not one but three parallel cuts through shirt and skin. They were shallow but bloody, and beginning to sting as his body reacted to the injury.

Wordlessly, he started to stand, only to drop to hands and knees on Malone's terse command. He crawled over to the thing the mountain man had shot out of the sky.

It was not intact. Malone's Sharps blasted a three-inch-long cartridge through an octagonal barrel. The nocturnal attacker had been blown apart. But enough remained to show Ruxton it was no creature known to modern science.

"What the blazes is it, Malone?"

The mountain man continued to survey the sky, his eyes seeming to flick from star to star as though he knew each intimately. The horses pawed nervously at the ground, rolling their eyes and tugging at their reins. Of the four, only Malone's mount Useless stood calmly, occasionally shaking his head and turning it sideways to gaze sourly at the two men.

"Wolful," Malone replied curtly. He set the rifle aside and drew his peculiar LeMat pistol.

The body was certainly that of a very large wolf. What lifted Ruxton's hackles were not so much the powerful, now-broken wings that sprouted from just above and behind the enlarged shoulders, nor the grasping talons on all four feet, one of which had slashed his shoulder and just missed his throat. It was the face that was really disturbing. The familiar long wolf muzzle was curved slightly, like some furry beak. The ears were too wide and long for any member of the *Canis* genus. And the now-dark eyes that had shone like the lamps of Hell were so swollen in size they nearly met above the bridge of the muzzle. It was a creature worthy of the imagination of a Dante.

He crawled back to camp and began pulling on his boots. Malone grunted satisfaction.

"Good. Reckon I don't have to tell you everythin'. We got to get under some cover." He nodded upslope from their trail. "Thought I might've seen a cave on our way in. Don't much care for dark places, but it might be big enough to hide us and the horses both." He rose and holstered the rifle, began assembling their equipment with one hand. Ruxton noted that he did not at any time let go of the LeMat.

They lost one of the horses despite their caution. Neither man rode, and the unflappable Useless led, but Ruxton's pack mare still broke her tether and bolted for the nearest stand of tall trees. As she charged across the slope, she shed cooking pots and utensils and food and tools, the equipment making a terrible racket as it banged and bounced off the rocks. Malone and Ruxton watched her go.

"She'll be all right," Ruxton declared hopefully. "We'll track her down come morning."

Malone's expression was grim in the moonlight. "Why do you think I didn't head for the woods?"

As the mare approached the first trees, the entire forest canopy appeared to rise from the topmost branches. Ruxton's mouth went dry, and he shivered. But what more natural than for nocturnal flying creatures to roost in flocks? The fleeing mare had disturbed them.

There were at least thirty of the huge wolfuls. They swooped down on the terrified animal, circling low and snapping with wolf jaws at her withers and neck. She kicked out frantically and sent one of her tormentors spinning. It yelped unnaturally.

There were too many to prevent the inevitable. A pair landed on her back, using their talons to cling to flesh and pack straps. They tore at her face and flanks. Others cut her legs out from under her, striking at the tendons until they had her hamstrung. Unable to run or kick, the mare was buried beneath an avalanche of snarling, tearing bodies. She whinnied wildly to the last.

Malone and Ruxton didn't linger for the end. Even as the mare went down, a couple of the flock were making exploratory passes at the remaining horses and men. Ruxton felt heavy feathers brush his head as he ducked. He was not ashamed to admit that he screamed. Malone's LeMat boomed several times. Once there was a deeper, sharper explosion as he

fired the .410 shotgun barrel that was mounted beneath the revolver barrel. Ruxton found himself surrounded by blood and feathers. He had a brief glimpse of feral yellow eyes. Then the sky disappeared as they stumbled into the cave.

It tunneled far back into the mountain. As Malone had hoped, there was more than enough room for all of them, including the horses. They tied them to boulders near the back wall of the cave.

Bored with the carcass of the already dismembered mare, the flock began to gather outside the entrance, padding back and forth and flapping their wings excitedly. The cave was actually larger than Malone would have liked. There was flying room inside. A lower ceiling would have been much more comforting.

Ruxton was breathing hard, his eyes nearly as wild as those of his mount. While it had stopped bleeding, his injured shoulder was throbbing mercilessly. But he could still hold a rifle.

"I regret the loss of my large-bore," he told Malone as he checked the .30=30. "It was packed with my other supplies on the mare."

The mountain man grunted. There followed an uncomfortable silence.

"Look here, Malone," said Ruxton finally, "I'm sorry I doubted you, old chap. I've been a bit of an ass all along, and I apologize." He stuck out his hand.

Malone eyed it, then enveloped it in his own huge paw and squeezed briefly. "I like a man who can own up to his own mistakes. I just hope you'll live to regret it." He turned back to the cave entrance. "There'll still be some meat left on your mare. When they've cracked all the marrow out of the bones, they'll work themselves up for a go at us. We have to stop 'em before they get inside, or we're done."

Ruxton nodded, resting his rifle atop a boulder that had fallen from the ceiling. "I've never even heard rumors of such a creature."

"Any folks whut sees one never gets away to tell of it. The Nez Percé know about 'em. They call 'em Sha-hoo-ne-wha-teh. Spirit wolves of the air. But the Nez Percé are unusual folk. They see things the Blackfeet and even the Cheyenne miss. 'Course, white folks don't find their way into this particular part of the Bitterroots.

"Way I figger it, no ordinary predator's fast enough or strong enough to take down a jackalope, especially when they stand and fight together. So these here wolfuls evolved to prey on 'em. Unfortunately, they ain't real

particular about their supper. You and me, we're a dam sight slower than a sick jackalope. As for the horses, well, they're regular walkin' general stores far as these critters are concerned."

"Listen, Malone. Most of my shells were packed on that poor mare along with my big guns. If things start to look bad, I'd appreciate it if you'd save a round in that LeMat for me. I don't mean for my rifle."

"I know what you mean. We ain't somebody's supper yet, Lord. They got to get in here first. Meanwhile, why not have a go at askin' your name-sake for help?"

"My namesake?" Malone's eyes rose as he jerked a finger upward. "Oh," Ruxton nodded somberly.

The wolfuls continued to gather outside, their massed wingbeats a vast rushing that soon drowned out the livelier, healthier babble of the river below.

"First they'll sing for courage," Malone explained. "Then they'll start circlin' as they decide which one of 'em will get the honor of goin' for our throats first. After that they'll come for us. Try and pick your shots. One way or the other, it'll all be over quick."

Ruxton nodded, his teeth tightly clenched as he stared at the moonlit oval that marked the entrance of their sanctuary.

When the flock began their howling, it was as if all the graves at Battersea had opened to release the long dead. The sounds were higher in pitch than normal wolf calls, a sort of moan mixed with the kind of screech an enormous vulture might make. The horses panicked at it, kicking up dust and gravel, pawing at the unyielding stone. Foam spilled from their lips. Only Useless stood placidly, one eye half-opened, swaying on his legs as if asleep. It made Ruxton wonder. Perhaps the animal was partly deaf and blind.

The flock leader was silver across his muzzle. He came in low and then rose abruptly toward the ceiling, awful talons spread wide to grasp and rend, vast yellow eyes staring hypnotically. They froze the startled Ruxton for an instant, but not Malone. The Sharps blew the wolful in half, the huge shell tearing through flesh and bone. Ruxton had no time to appreciate the difficult shot, because the rest of the flock followed close on the heels of their dead leader.

The terrified whinnying of the horses, the howls and roars of the wolfuls, and the rapid firing of both men's guns were deafening in the en-

closed space. Ruxton saw Malone put down the empty LeMat and race to reload, his thick fingers moving as precisely as those of a concert pianist. He'd drawn his big bowie knife and used it to fend off his attackers as he worked.

Then Ruxton saw him go down, the golden-furred hat flying as a diving wolful struck him across the forehead. The claws missed his eyes, but the impact was severe.

"Malone!" Ignoring the pain shooting through his shoulder, Ruxton rushed to the other man's side. His rifle cracked, and another wolful dropped, snapping mindlessly at its own damaged wing.

The mountain man blinked dazedly up at him, bleeding from the gash in his head. It was a shallow wound. He was only stunned.

That was when the flapping and howling and gnashing of teeth ceased. So concerned was he with the guide that Ruxton didn't notice it at first. Only when he helped the much larger man to his feet did he see that the last of the wolfuls had turned tail and was fleeing the cave.

"They're leaving. We beat them, old man! Gave them a sound hiding!"

"I think not, Lord." Malone fought to penetrate the oil that seemed to be floating on his retinas. "The Sharps — gotta get the Sharps." He stumbled, blinking dizzily.

"Hang on. I'll get it. But we don't need it anymore. They've gone, you see, and —"

He stopped in mid-sentence, holding his breath even as he left Malone to pick up the heavy buffalo rifle. The last howling of the wolfuls had faded into the distance, but it was not silent outside. A dull booming, as of some heavy tread, was clearly audible and growing steadily louder as he listened. He forced himself to keep his hands steady as he loaded the Sharps.

The massive breathing was right outside the cave. Evidently they were not the first creatures to make use of its shelter. The horses were too terrified to whinny. They huddled together against the back wall, trembling.

The moon went out as something immense blocked the entrance. Ruxton raised the Sharps and tried to hold it steady. Though he was a strong man, it sent shivers along the muscles of his arms.

Whatever stood there had to bend to fit beneath the twenty-foot-high ceiling. Its eyes were red instead of yellow like those of the wolful. An

overpowering musk assailed Ruxton's nostrils as the hairy leviathan paused to sniff loudly.

It growled, and Ruxton felt his knees go weak. Imagine a whale, growling. The growl became a snarl that revealed teeth the size of railroad ties in the blunt, dark muzzle. It was coming for them.

Ruxton pulled the trigger, and the Sharps erupted. He thought he'd prepared himself for the recoil, but he was wrong. It knocked him on his back. The echo of the gun's report was drowned by an incredible bellow of pain and anger as the monster stumbled backward.

The rifle was pulled from his numb fingers. Malone reloaded as Ruxton staggered erect. The owner of the cave was already recovering from the shock and preparing to charge again. This time it would not hesitate curiously. A second slug from the Sharps wouldn't stop it. Not this time. As well to try shooting a runaway locomotive.

Something went flying past him like black lightning. Ruxton had a glimpse of white fetlocks and flying mane. Useless slammed headfirst into the belly of the monster like a Derby winner pounding for the finish line. The gargantua went backward, falling head over heels down the slope.

"Dumb, stupid son of a spasmed mare!" Malone growled as he gripped Ruxton by the shoulder. "Let's git out of this damn possum trap!"

They stumbled outside. There was no need to lead the remaining horses. Freed from their tethers, they sprinted madly past the two men. Malone and Ruxton ran downslope toward the forest, now devoid of roosting wolfuls.

Ruxton risked a look backward. A less brave man might have fainted dead away right then and there, or swallowed his tongue at the sight.

Useless had become a darting, spinning black dervish on four legs, nipping at the ankles of the immensity that now stood on its hind feet. It swiped at the much smaller but nimbler horse with paws the size of carriages. Each time a blow capable of demolishing a house descended, Useless would skip just out of its reach.

Only when the two men were safely in among trees too old and thick even for the leviathan to tear down did Useless abandon his efforts. With a roar, the monster chased the horse a few yards. Then it bellowed a final defiance before dropping to all fours. Like a piece of the mountain come to life, it turned and lumbered back to reclaim its cave.

Running easily, Useless galloped past both winded men. He turned the

fleeing horses, circling them until they slowed, nuzzling Malone's own pack mare until she stood quietly, spittle dribbling from her jaws. Then he snorted once, shook his head, and bent to crop the tops of some wild onions that were growing nearby.

"Mr. Malone, that is quite a remarkable animal you have there." Ruxton fought for breath as he rested his hands on his knees. "How did you ever train him to do something like that? 'Pon my word, but that was the most gallant action I have seen a horse take on behalf of its master."

"Train 'im? Gallant? The idjit bastard like to got hisself killed! I had a clean shot. Coulda stopped it."

"Stopped that behemoth?" Ruxton nodded in the direction of the cave that had initially been their refuge and had nearly ended as their grave. "Not even with that cannon you call a rifle, old chap. Your animal saved us for sure."

"Well — mebbe. But it was still a damnfool thing to do."

Malone repeated the assertion to his mount's face, shoving his beard against that squinty-eyed visage while holding it by the neck.

"You hear me, you moronic offspring of a mule? Don't you never try nothin' like that again!"

Useless bit him on the nose.

WHAT WAS it, anyway?" Now that they were well away from the nameless river and the canyon it had carved, Ruxton found he was able to relax a little. The sun was rising over his unsatisfied curiosity.

Malone had spent much of the morning muttering curses at his mount while occasionally feeling gingerly of the bandage Ruxton had applied to his nose. It was an incongruous slash of white above the black beard. Personally, Ruxton had felt the animal justified in its response.

"Somethin' big enough to snatch a wolful right out of the sky. Nez Percé, they call it — wal, never mind what the Nez Percé call it. You wouldn't be able to pronounce it anyway. Me, I call it a grizzephant. Only the second one I've ever seen. If the good Lord wills it, I'll never see another. Reckon you could call it *Ursus loxodonta*."

"Why, Mr. Malone, sir. Latin? I do believe you are at pains to conceal a real education."

"Nope. Just don't use it much 'cause nobody around here cares one way or t'other. They don't believe half of what I try to tell 'em anyways, so I just keep my mouth shut." He leaned over to give his mount a reluctant pat on the neck. "Old Useless here, I reckon he deserves a genus of his own. I just ain't come up with the right one yet, though I kinda lean toward *Equus idioticus*. With the emphasis on the 'cuss.'"

Ruxton leaned forward for a better look. As he did so, he noticed that the leather patch that normally covered the animal's forehead was hanging loose, having been dislodged in the fight.

"Mr. Malone, would I be remiss if I were to suggest that your horse has a horn growing from the center of his forehead?"

Malone leaned out for a look, straightened. "Drat. Got to fix that before we git to Randle's Farm. Folks in these parts don't rightly understand such things as unicorns."

Ruxton couldn't keep from staring. The horn was six inches long and looked sharp. Undoubtedly it had helped keep the grizzephant's attention last night. He could just make out the marks where Malone had kept it filed down.

"I know an elderly Chinese gentleman who will give you a million pounds sterling and six of the most attentive and beautiful women you ever set eyes upon for that horn, sir."

"No, thanks, Lord. Be happy you got your jackalope."

"Yes, my jacka—" Ruxton's eyes got very wide. "The jackalope! It was tied to the packhorse the wolfuls killed!"

Malone eyed him evenly. "Want to go back and try again?"

Ruxton turned around in his saddle. His shoulder still throbbed, but the injury was almost completely healed thanks to some strange-smelling herb powder Malone had rubbed on it while mumbling some nonsense about Tibet and Samarkand. He straightened resolutely, bringing his gaze back to the trail ahead.

"I will mount the memory in my mind," he said firmly, "and make do with that."

For the first time since they'd met, Amos Malone smiled. "I reckon mebbe you ain't as dumb as you look, then, Lord. Even if you do ride funny. Ain't that right, sweetie-dumplin'?" He caressed his mount's neck.

Useless looked back out of his half-closed squint eye. A kind of thunder rolled across the Bitterroots one more time as the unicorn farted.

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Corrigan's Homunculi

By Larry Tritten

SETTING IT UP had been a laborious task, but not a hard one. Money was the bottom line. It cost Corrigan a few million dollars, but analogically that was just a drop in the water of the vast ocean of his fortune, all inherited from his grandfather, who had made it selling weapons and military equipment to southern European and Central American despots. The grandfather had been fascinated by war ever since getting a set of military miniature Swiss pikemen for his sixth birthday, and it had become his passionate avocation, then his business. Corrigan inherited the avocation as well as the business. He would never forget the extraordinary impact of his first visit to his grandfather's mansion in Nichols Canyon, the stunning first sight of the numerically complete diorama of Crécy: thirty-one thousand exquisitely rendered miniature knights, archers, and men-at-arms locked in gaudy combat. The greatest array of penny candy conceivable could not have been more enticing to him. And that night there had been a party, a costume ball at which his grandfather, as Il

Duce, had presided over a room full of colorfully garbed celebrants — musketeers, lancers, hussars, Nazis, dragoons, Indians, paratroopers, et al. As a child, Corrigan remembered that day with the sort of vivid entrancement that other children remember a sensational Christmas.

After his grandfather died, Corrigan multiplied his inheritance. He had put more dioramas in the mansion — numerically accurate re-creations of Thermopylae, Austerlitz, Cowpens. But ultimately the static displays began to seem too concertedly novel and monotonous. He had heard about an underground geneticist who claimed to be able to do fabulous things, things that were criminal, and possibly unconscionable. Corrigan didn't care about that, of course. He lived comfortably with the fact that blood was the source of his wealth.

He had gone to visit the geneticist in the motel-style apartment where he lived across the street from the old railbed just west of Century City. The meeting had been carefully arranged through their middleman. The geneticist, whose deep saltwater tan made a paradoxical contrast with his world-weary demeanor, was nonetheless lively and loud.

He put a cruse of mucosoquartz on a coffee table in the small living room and gave Corrigan a look of challenge.

Corrigan smiled and took an ampule of devil's jism out of his pocket and emptied it into the pink liquor. "Be my guest," he said.

The geneticist laughed loudly and poured himself a drink. When he looked back at Corrigan, there was a glint in his eyes. "You're a serious man, aren't you?"

"Don't fun me," Corrigan said. He took a fist-size clump of currency out of his pocket and tossed it on the coffee table. "Anything you want," he said. "What can you do?"

"It all."

"Create life?"

The geneticist laughed and took a drink, his gaze becoming, it seemed to Corrigan, almost occult. He said, "Come here," and motioned Corrigan to follow him into an adjacent bedroom that stank of white junk and residual sex. A single flame-shaped bulb burned in a wall socket, and shadows towered flickeringly all around them, bookish clutter everywhere. The geneticist opened a cabinet and took out a transparent plastic box. He held it up in the dim light, and Corrigan saw there a beautiful blonde woman, perhaps two inches tall, who stared at him through the

glass lid, which was perforated with air holes. The geneticist removed the lid of the box and shook the tiny being into his hand, where she sat, palms down, with an expression of confusion. After a moment he slid her down onto his little finger, which she straddled involuntarily. Then he quickly put her away while Corrigan stood speechless, watching.

"Got the IQ of a mouse," he explained.

Corrigan was still speechless. In the depth of his mind, however, fantastic concepts were stirring; a dark and bizarre ambition was taking shape. He saw that the geneticist was smiling at him as if he had fathomed the depth of Corrigan's mind and glimpsed something ominous there.

"They can be made in numbers?" Corrigan asked.

The geneticist smiled wanly, and suddenly Corrigan realized something about the man that was implicit in his detached and somewhat abstracted manner — that his was the disposition of a slightly conceited deity, which he in effect was — a techno-deity, if you will. "Of course," the geneticist said, and made a caricature of an imperial gesture. "Secrecy, of course, is vital. This lore is considered by society to be a form of religious pornography, an obscene tampering with the fundamentals of anthropomorphism." He shook his head. "If the pious did not conceive God in their own image, then most of the ambitious accomplishments of science would not be considered competition with divinity. I'm only a geneticist, not a god, but perhaps it was always the most wicked science, since the word derives from the same one that names the first book of the Bible."

Corrigan was bored with this attitudinizing. "How can it be done?" he asked.

The geneticist met his gaze. "Give me what I need, and it's a matter of following an organic blueprint."

"What do you need?"

"Two million dollars for the laboratory. Three. Ten percent of that for myself."

"When can we start?"

The geneticist walked thoughtfully back into the living room, with Corrigan following him. There he turned around and smiled again. "You are serious, aren't you?"

The money was nothing to Corrigan. Several million dollars more or less in his life was a trivial matter. The geneticist was astonished by the dispatch with which he commenced to spend vast sums. "It's all in keep-

ing with the second law of thermoeconomics," Corrigan joked. "Money can be neither created nor destroyed; it's there to be spent."

The laboratory was built and stocked in the desert near Palm Springs. Spring turned to summer, and while Corrigan traveled — visiting the Custer Battlefield, Gettysburg, Omaha Beach — the geneticist worked. He had never once inquired why Corrigan wanted hundreds of homunculi, and during their conversations, Corrigan came to deduce that he didn't want to know; he wanted only the opportunity to do what no one else could or would sanction. And he did it.

There came a night when Corrigan descended in an elevator with him to the cellar. As a child, Corrigan had had a friend who raised rabbits, and he remembered the exotic experience of going into the hutch where the cages were lined up and watching the penned beasts in their cells. This reminded him of that: the cages had similar wire mesh, and through it he saw tiny naked men loitering or moping about, many of them sitting aimlessly in the dollhouse chairs and couches that furnished the cages. Few of them seemed interested in Corrigan and the geneticist as they looked on, and those who did heed them merely stared blankly back through the mesh at them, uncomprehending. Their minimal intelligence, Corrigan thought, could be the fly in the ointment of his plan for them. He sighed. They could not, he supposed, be made to fight each other as if for cause or profit. He hoped that they would be at least survival-oriented. Else they would be good only for cannon fodder. He needed troops with spirit, if not the combative zest of Gurkhas or Seljuk Turks.

Corrigan's dream was to restage a major historical battle. Ideally it would be an impeccably realistic re-creation, but he had realized early on how many flaws there would be in the verisimilitude of the undertaking. The uniforms and much of the equipment could be created to scale, but weapons that actually worked were a problem. In his dreams he conceived of World War II infantry with little weapons that actually worked — M1s into which tiny hands would deftly insert eight-round clips of miniature .30-caliber ammunition, Thompson submachine guns rendered right down to the incredible detail of clips that could be taped together so more rounds could be fired, carbines with extra clips in cloth pouches on the stocks, and so on. But this was impossible, of course. His homunculi would lack real weapons and also homicidal motivation.

That left, he realized, the possibility of artillery barrages. His mind kept

returning to images of Iwo Jima, the marines on the beach in volcanic sand with Arisakas and mortars pounding them from Mount Suribachi, the dead volcano on the southern end of the island. And so he began the project. In an underground room he created a tank one hundred yards long, thirty yards wide, and twelve feet high and gave it a shockproof glass ceiling and viewing wall. Inside it he constructed an earthen replica of Mount Suribachi that would have comfortably filled a small backyard. One side of the tank was ingeniously filled with water that was piped in, and a beach created, along which replicas of invasion craft, vehicles, and other equipment were placed — LCIs, LCVPs, LSTs, Higgins boats, Jeeps, Sherman tanks, cranes, and 155-mm howitzers; and then the beach was strewn with the smaller litter of battle, such as abandoned packs, gas masks, blanket rolls, stretchers, ponchos, ammunition boxes — everything precisely detailed in miniature. From the opposite side of the tank, beyond Suribachi, a number of small cannons set into the wall could be fired at the beach.

When everything was ready, Corrigan personally transferred 250 of his homunculi to small pet carrying cages, put them in a truck, and drove them to his mansion where he carried the cages to the underground with a sense of keen anxiety. He took the two cages into a small storeroom and sat them on a worktable in the subdued green glow of an unshaded bulb hanging on a cord from the ceiling. The homunculi moved about restlessly in the crowded cages, many of them glancing out with a sort of mute curiosity at the towering man outside the mesh. They could not speak and were virtually thoughtless, yet were sentient, though not in the more highly developed sense of Corrigan's species.

With a can of Somnus, Corrigan spritzed them with a blue mist and watched studiously as they grew sluggish, staggering about until they succumbed to the sedative and sprawled on the floors of the cages. He laid them out in rows of ten on the table. As he stood there looking at the tiny naked bodies, he became aware of the pounding of his heart, and an unnerving sense of psychosexual wonderment came over him, reminiscent of the prepubescent intimations of sexuality he had felt as a child whenever any adult manifestation of eroticism impinged on his consciousness. In some covert of his libido simmered the knowledge that he regretted that these dolls were not female and his plan for them less brutish — but he shut the thought out of his mind and took up the wardrobe bag, empty-

ing it on the table beside the inert figures.

The olive drab uniforms were perfect, even down to the globe and anchor emblem stenciled on the left fatigue blouse pocket, names stenciled on their backs (the names chosen randomly from the phone directory), and rank on the sleeves; and the packs, bandoliers, canteens, helmets with camouflage cloth coverings, and the like were all extraordinary. The weapons were impressively detailed replicas of real ones, but of course did not work.

Corrigan outfitted his marines. It took hours, and the eerie symbolic paternalism of it left him feeling psychologically strange, but when he was finished, he eradicated the discomfort by drinking three fingers of pastoral. Then he pushed the button that slid the top of the tank into the adjacent wall, and used a ladder to climb down into the tank, delicately carrying a tray of marines in one hand. For the next hour he placed marines in carefully chosen spots along the beach in the volcanic ash, then went upstairs and had breakfast.

Corrigan slept for four hours, then dressed in the uniform of an Imperial Japanese soldier, donned his helmet with the yellow star on it, put a full clip in his 8-mm Nambu pistol, tucked his samurai sword into his belt, and went to his battle station.

Through the viewing slit of his bunker on Suribachi, Corrigan-san had a sweeping view of the landing zones — Green Beach, Red Beaches 1 and 2, Yellow Beaches 1 and 2, and Blue Beaches 1 and 2 — where the Fourth and Fifth Marine Divisions had landed and were dug in. Or *should have been* dug in, Corrigan-san thought as he looked more closely. The marines stood stuporously or sat listlessly in the volcanic sand or moved aimlessly along the beach, those few who carried their weapons holding them awkwardly or dragging them in the sand.

"*Baka na,*" Corrigan muttered angrily. He swiveled one of the small cannon, aiming it toward the beach, and fired it. The shell burst just to the left of a bulldozer at the water's edge, shrapnel from the explosion cutting down two nearby marines. Corrigan-san saw the red stains on the fatigues of the fallen marines and nodded coolly. *Banzai!* He fired the cannon again and saw the ash erupt sensationally, showering down on the marines near the explosion. He fired again. *Hit the beach, take cover!* But something was wrong. . . . The idiot Americans were not digging in, but merely stood dumbly on the beach, most of them scarcely even moving. Angri-ly,

He loomed Gulliver-like in the smoking chaos, which he knelt to examine with fascination.

Corrigan-san fired again and saw a marine thrown through the air by the blast to land in a twisted posture, his mouth gesticulating fishlike as he lay dying a couple of feet from the smoking shell crater. Now, like an anthill stirred up, the marines on the beach began to move briskly, but instead of taking cover, they milled about futilely, walking back and forth or in small circles. *Baka na!* Furious, the Japanese fired again, again, again. He heard the distant explosions and saw the brackish smoke littering the air along the beach where the shells had hit. Marines fell in two and threes along the terraced surfaces of the beach, their bodies mutilated by shrapnel, equipment damaged and strewn in disarray. In his mind, Corrigan-san saw a photo montage of the beach at Iwo Jima the way it had been in reality, with the marines burrowing deep in the black sand, cigarettes dangling from their lips.

Corrigan-san took off his helmet and wiped sweat from his forehead. This was not satisfying. With an almost academic calculation, he returned to his gun and continued firing it rapidly and methodically, massacring the marines on the beach. *Banzai! Banzai! Tenno Heika Banzai!* The leatherneck homunculi died silently, without a cry, whimper, or moan—just like insects, thought Corrigan-san, which is exactly what they were behaviorally.

When it was over, Corrigan-san ate a bowl of rice, drank a cup of sake, and then went inside the tank to explore the beach. He loomed Gulliver-like in the smoking chaos, which he knelt to examine with fascination. A hundred and twenty-eight marines had been killed and seventy-three wounded, a casualty count that surprised him because in actual combat the wounded outnumbered the killed two or three to one; but the homunculi were apparently more vulnerable and fragile than real human beings. In any case, the beach was a terrible mess, extremely bloody and with fragments of bodies everywhere. Well, there was that much verisimilitude in the exercise, Corrigan thought. He gathered the wounded together [three more of whom died in the process], returned the veterans to a cage, and left the corpses along the beach for graves registration, a duty he would perform later [he would need a magnifying glass to read the diminu-

tive dog tags). In the meantime he turned his attention to the wounded. Thirty-one were clearly fatally wounded; the others might recover on their own, although Corrigan saw no way to minister unto them. The thirty-one he left on the beach. To die. In a moment of grim whimsy, he envisioned tiny Purple Heart medals approximately the size of a sequin. Surely there would be no Navy Crosses for the klutzes on this beach.

Later that day, Corrigan had no stomach for returning to Iwo Jima. He forgot about it. Like an old soldier visiting a battlefield where he had once fought, he would return in a day or so and decide what to do then.

That night, Corrigan dreamed, as he often did, of flying. He never knew what kind of plane he would be flying in these dreams. He might be in a P-51 with white invasion stripes on the wings, looking for targets of opportunity in the French countryside on D-Day morning; or flying a blood-red Fokker triplane with von Richthofen's Flying Circus, mixing it up with Spads and Nieuports; or even making an uneventful courier flight between China and India in a Tenth Air Force B-25. Tonight, appropriately, he was the pilot of a Kawasaki Ki-45 Toryu of the Fifty-third Sentai of the Imperial Japanese Army Air Force, and had just taken off from Matsudo Airfield northwest of Tokoyo. Through the cockpit, ahead and above, he saw formations of B-29s. *Banzai!* He climbed to meet the Superfortresses, eager to kill and willing to die.

When he woke, Corrigan was moody and petulant. The sky above Los Angeles was livid, and strong winds prowled the canyon, agitating the foliage and swaying trees. Over breakfast on the huge redwood porch overlooking Nichols Canyon, Corrigan pondered his new hobby. Iwo Jima had been altogether unsatisfying, he admitted to himself. The point of a battle was that it was a contest, but there was no contest when the enemy didn't fight back. Even a static diorama gave an illusion of combat. If the homunculi could not be made to fight each other, the whole concept of a living diorama was invalid. If that could be done, he could concentrate on wars of cutlery, incarnating them as Romans, Greeks, medieval infantry, and so on, and watching them fight man to man. But it couldn't be done. . .

Yet still, he consoled himself, there was a certain satisfaction in being the source of an artillery barrage. He remembered fondly how as a boy he would set up scores of bottles to represent enemy soldiers, and then subject them to a shattering bombardment of thrown rocks, and how he

would also sacrifice his best toy soldiers in a similarly destructive game played either with rocks or firecrackers. There was always pleasure in touring the battlefield afterward and appraising the damage, enjoying the sight of broken glass and seeing how graphically the toy soldiers had suffered, with a limb crushed out of shape or a pink face blackened from an explosion or its paint marred by a hit with a heavy rock. No, let no one disparage the satisfaction of an artillery barrage. It was one-sided, sure, but wasn't that the point of war, to win? Corrigan considered the barrages he might re-create: those from the western front in World War I, the eastern front in World War II, the Japanese Navy pounding the First Marine Division at Guadalcanal, the elimination of Pickett's charge at Gettysburg, the sieges at Dien Bien Phu and Khe Sanh. And yet. . . .

Irritably, Corrigan paced the porch, wondering what to do. Bored, he went inside and watched a tape of *Victory at Sea*, marveling as ever at the exciting footage of shot-up Corsairs and Hellcats returning to their carriers and landing in spectacular crashes. He started drinking, taking whisky straight from the bottle. He put the *Gary Owen* on the stereo and turned the volume up, prancing wildly around the living room to the music, a bottle in one hand and flailing at the air with an authentic Seventh Cavalry saber that had (the collector had assured him) been found on the battlefield at the Little Bighorn.

By early afternoon, Corrigan was drunk. He went downstairs and visited the wounded marines, who were confined to two cages on a shelf in the basement, and discovered that another two of them had died. He transferred the corpses to the invasion beach and went back upstairs and drank himself to sleep.

Braskov lived in a mental haze that sometimes cleared enough to allow periods of more or less conventional comprehension, but often dimmed to the point where his identity was as remote as the light from a star. He had been this way for over thirty years, his mind in captivity to a traumatic series of ancient images that recurred continuously, like the same movie being shown again and again and again in a lonely theater: there was the ambush on the Cam Lo-Conthien road, with tracers streaking wildly out of the jungle into his platoon; the sandbagged bunkers at Khe Sanh, with tides of black smoke rising against the green hills in the background from a hit on a fuel dump, a C-130 burning on the airstrip there, its upthrust tail

silhouetted against the cold sky, and the fly-covered body bags lined up beside the strip; the night sky alight with burning magnesium flares; straw houses burning, villages engulfed in flame; ugly hills stripped barren by napalm and chemical spray, pitted with craters; tracers rising almost elegantly from the jungle, like Fourth of July roman candles, toward helicopters; marines moving through tall grass against a tree line, mortar shells sending geysers of mud into the air all around them; dead marines in the jungle, beside the roads, and on hills, and dead First Cavalry soldiers.

Back in the world, Braskov had just quit. He couldn't think clearly anymore, not since a shell had landed on the edge of his hole and propelled him into psychological oblivion. He had worked at a few jobs, simple ones, hauling trash, distributing circulars, cleaning the rooms at a motel, and finally had concentrated on heavy drinking. He had spent a few years living in a cheap room in the neighborhood of the bus depot in downtown Los Angeles, hanging out and supplementing his VA check by panhandling; then an odd instinct had caused him to emigrate into the canyons of West L.A., where he lived somewhat efficiently as a scavenger, his life almost as fundamental as an aborigine's. He spent days and even weeks in the canyons without coming out, living on amazingly serendipitous finds in the garbage of the trendy inhabitants, and occasionally, in more lucid periods, he came down into the world and walked the streets of Hollywood, feeling like an extraterrestrial on a strange planet.

He hardly ever spoke, and when he did, it was usually to repeat a sentence he had heard himself say thousands of times in the past thirty years: "I didn't kill any prisoners." The words were the ghosts of his long-dead speech, and only he knew what they meant: the rest of them — Powerhouse, Dunn, Snipe, Kolb, Snow White — had killed prisoners. It was no secret, not even from the captain — but that was a fraternity he hadn't wanted to belong to.

For several days, Braskov had been foraging in the vicinity of a huge Mediterranean-style house that sat high atop the canyon with an impressive view of the surrounding hills and a distant glimpse of downtown. For some reason unknown to him, the house had drawn his attention in an almost hypnotic way, and he had taken to watching it, doing recon on it. Sometimes he saw a man on the big back porch or moving about somewhere else in the house or on the grounds, but the man was always alone.

Apparently he lived there alone and seldom had visitors. Braskov didn't think about why that might be so — he merely made the observation. Nothing mattered.

Then one morning, Braskov had heard, like the haunting echo of terrible memories, the sound of explosions from somewhere deep within the house, seeming in fact to come from within the earth itself. He had fled in terror, had put the house out of sight, but when he went back toward the end of the next day, his interest was fixated on the house. He prowled close to the perimeter, lurking, watching, and wondering what he had heard, and what it meant. The sounds of war had opened an ancient wound in his mind, and the pain was fresh again, and terrifying enough to make him . . . fearful.

As Braskov crept within a couple of hundred yards of the house, the winds that had ranged through the canyon all day stopped, and the clouds that had gathered overhead began to release their burdens of rain. It was the kind of dramatic pile-driver deluge that Los Angeles serves up from time to time for its sun-balmed citizenry, rain that came down in a roaring downpour, erasing the world from the sight of those caught in it. Out in the open, Braskov was soaked within seconds, and he ran as if by reflex up the slope toward the cover of the house's huge redwood porch jutting out over the incline. Slipping on loose gravel and wet earth, he climbed all the way back up under the bottom of the porch and crouched there, shuddering from the sudden cold wetness. He was wearing only a khaki shirt and Levi's, although he had thought it might rain today, but he had been too preoccupied with his confused fixation on the house to think clearly enough to put on his old battered raincoat.

The rain drummed loudly on the porch above him, pouring off its sides, Braskov watching with dull interest as he sat there. There was no telling how long it might go on. Braskov looked up at the porch and thought about the house, wondering with a sort of blank curiosity about it. Slowly, by degrees, he felt an icy resolve form inside him. After a few moments he crawled as far back under the porch as he could, then over to one side, taking hold of the timber and rising to twist and look up onto the porch. The long glass doors that led onto the porch were uncurtained, the house in darkness. Braskov hauled himself up onto the porch and moved to the glass doors. Inside he saw a vast living room, the shapes of furniture limned in a soft light shining from an adjacent hallway. Braskov brushed

strands of wet hair out of his eyes and pressed his face to the wet glass, peering in.

"Didn't kill any prisoners," he breathed, the familiar words like a nervous verbal tic, spoken so softly and unthinkingly that he wasn't even aware he'd said them.

Braskov noticed then that the glass doors had been left open an inch or so, that the house was open to him. He slid the doors open and went inside, almost without thinking about it, as if something remote but imperative in his mind were guiding him. He walked silently through the living room and into the softly lighted hallway, noticing as he moved very slowly through it that the walls were lined with framed lithographs of old British, Prussian, and French uniforms. At the end of the hallway, the door to a small room stood open. Braskov went inside. There was a desk to one side, and he could make out a small lamp standing beside a computer. He eased the door soundlessly shut behind him, then switched on the lamp. The light that filled the room disclosed walls lined with books and one upon which a number of weapons were exhibited on metal brackets. The top four — the seventeenth-century William III cavalry carbine, the Sharps Model 1859 rifle, the French MAS 36 rifle, and the MP 43 assault rifle — Braskov didn't know, but he knew the others: the M3 grease gun, the M1 carbine, the M16, and the Soviet AK-47, especially the last two. As he stared at the latter two, he experienced a brief moment of psychic vertigo, and then he was slipping again into the whirlpool or memory — looking down the sights of his M16 at two N.V.A. soldiers moving furtively beyond the lines of barbed wire and German razor wire on the perimeter of Khe Sanh, pulling the trigger. . . .

Braskov took the M16 down from the wall and was amazed to discover that it was loaded. He cradled it in one arm, noticing as he did that he was almost trembling. Almost. Carrying the weapon, he moved quietly back into the hallway. At the end of the hallway, there were closed doors on both sides. He opened one with his left hand, stealthily, and looked inside. Blackness. Then he saw that a staircase descended into the dark. Why not? He put his right foot on the first step. The step made no sound underfoot. Slowly then, he went down the stairs, holding a banister as he descended in complete darkness, feeling his way slowly with hand and foot.

At the bottom of the stairs, Braskov turned into a corridor. About fifty feet ahead, like a subliminal phantasm, a soft green light illuminated the

corridor. Braskov moved toward it, watching the light and listening carefully in case someone should come down the stairs to his rear. The weapon felt familiar in his hand. He hadn't actually held one in over thirty years, although in the newsreel of his memories, he had seen himself carrying one thousands of times.

As he approached the light, Braskov saw that it was illumination from inside an enormous glassed-in tank in the wall. He caught a glimpse of the water and assumed that it was a fish tank, infinitely bigger even than the dolphin tank he had seen long ago in Steinhart Aquarium in San Francisco. This tank was at least a hundred yards long. As he approached it, Braskov saw the landing craft on the distant beach, then the tanks in the sand, and finally the military detritus of invasion.

As he drew adjacent to the tank, Braskov saw, in the near distance, the volcanic mountain peak. He recognized it immediately, as any marine would have. He'd seen it again and again in training films, not to mention the old John Wayne movie in which he played Sergeant Stryker. Braskov stood looking hypnotically at the mountain for several seconds, then moved slowly ahead to check the beach. He stopped when he saw the first dead marine, and then, looking closely, he noticed more of them, sprawled in various postures of death, bloody, facedown in the sand or with their bodies grotesquely twisted. Iwo Jima!

The dead looked so familiar. Now Braskov was overwhelmed by a strange and ineffable passion. It was as if he had just risen indestructably from the terrible carnage of a battlefield. He heard the sound of movement behind him an instant before the blazing sound of the AK-47 filled his ears and the distinctively green tracer streaked over his head, but by that time he had already turned and fired the M16 wildly into the darkness of the corridor. There was a long moment of silence, and then he heard the rifle being dropped and a body striking the floor. Braskov rushed back through the corridor until he came to the body, kicked it both in anger and for effect, and winced when he heard the man on the floor cry out. He got his fingers around his prisoner's collar and dragged him with his left hand up toward the light from the tank. There the man's agonized face resembled a pale and horrifying Halloween mask. Braskov pushed him against the wall, then walked quickly back and picked up his weapon. His ears hadn't deceived him: it was an AK-47. He was back in Vietnam, back there for real — or . . . maybe he was in Hell. He looked at the diorama of

Two Jima. Yeah, Hell.

Braskov checked the N.V.A. soldier and saw that he had been hit once; a round had clipped him on the hip — not a serious wound, but he was bleeding a lot and obviously terrified. Braskov slung the AK-47 over his left shoulder. He saw a door farther along the corridor. He opened it and went inside the room, his finger taut on the trigger of the M16. He found a light switch on the wall and flicked it. A green bulb hanging from the ceiling filled the room with dim effulgence. It was a tiny room, a storeroom of some kind. There were a few folding chairs in the middle of the room, and the walls were stacked with unmarked crates.

Braskov went back into the corridor and kicked the dazed and frightened prisoner until he lurched to his feet, then goaded him into the room. "Wait a minute, wait a minute, I need help," the prisoner cried. He glared at Braskov. "Let me stop this bleeding — you can *have anything here*. . ."

"No, no," Braskov shouted. He pushed the enemy soldier down onto one of the chairs. Then he left, locking the door from the outside with a key that hung from the doorknob on a chain. He shut the muffled cries out of his mind.

Braskov continued along the corridor, past the end of the diorama, and emerged in another room. He found the light switch and turned on the lights, which were much brighter here. The room was another storeroom, but much larger. There were scores of cardboard and wooden boxes stacked against the walls, and several antique halberds on the floor across the room.

Braskov's gaze was drawn by sudden movement, and he turned quickly nearly firing the M16, but seeing the cages before his finger yielded to the impulse.

He walked over to the cages and bent forward to see what was in them. In the clear green light, he saw the wounded marines sprawled painfully in the first cage, then saw the silent and dazed marines in the second cage, looking just like the members of his platoon had looked in the wake of a firefight, grim and pared down. Some of them turned their faces up to him, and Braskov felt in that moment as if a radiant glow had enveloped the scene. He stood staring for a long time while madness drove a gradual salient into his mind.

Then he returned to his prisoner in the other storeroom. The man had become calmer, seeming to realize that his wound would not kill him, but

he still looked back at Braskov with wild-eyed appeal.

"Let me take care of this wound, will you, then I'll show you anything you want," Corrigan said in an attempt at cool bravura.

Then Braskov did something he'd never done before.

He killed a prisoner.

He went back to the other storeroom and opened the cages and put them on the floor, removing the wounded marines one by one carefully and gently, staring at them in silent amazement. A tiny helmet rolled across the floor with the sound of a coin spinning. The unwounded marines walked hesitantly out of the cage, none of them carrying their toy weapons. Braskov stood up straight and looked down at them milling around his boot, aimlessly. We could use something to eat, he thought, envisioning a kitchen upstairs somewhere. Chow time.

"C'mon, let's check it out," he said, reaching up to touch the rim of a helmet he wasn't wearing. "Chow time."



"They said you can't take it with you but I did."



SCIENCE

ISAAC ASIMOV

THE MOON'S TWIN

ONE OF the difficulties of learning to read at a very young age, and of beginning at once to read indiscriminately, is that it makes it difficult to look back and say, "This is the occasion on which I first learned about thus-and-so." To me, it seems as though my knowledge of the various subjects on which I write books dates back to the dim mists of my personal prehistory.

As an example, I cannot for the life of me recall whether I grew interested in Greek mythology as a result of my early reading of astronomy, or vice versa. I read both as a little kid and they have grown confused in my mind.

The fault may lie in the fact that the books on astronomy I read in the first decade of my life were very strong on the description of the constellations and on the myths that lay behind them. Long before I had any real idea of what stars were, I learned that Ursa Major, the

Great Bear, and Ursa Minor, the Little Bear, had been the nymph, Callisto, and her son, Arcas, before they were placed in the sky. It took me quite a while to gather that constellations are about as important to astronomers as national boundaries are to geologists.

One of the Greek myths involves the nymph Io. (The common English pronunciation, which I always use, is "EYE-oh," but the Greek pronunciation is "EE-oh." Some astronomers have now taken to that.)

Io, the daughter of a river god, had the misfortune to attract the lustful attentions of Zeus (Zeus, in the Greek myths, was given to making love to every female in sight, to the great annoyance of his jealous wife, Hera).

Hera caught on (she always did) and, in revenge, changed Io into a white cow and set the monster Argus to watch over her. Argus had a hundred eyes and, at any one

time, only some were closed in sleep, so that he was an efficient watchman. (Of course, three ordinary people in shifts would do as well, but the Greek gods never thought of simple solutions.)

Zeus thereupon sent Hermes to lull Argus to sleep with a soporific tale, and when all hundred eyes closed and poor Argus was snoring away, Hermes killed him.

Whereupon Hera, not to be outdone, sent a gadfly to sting Io and keep the poor, transformed nymph on a perpetual move over the lands of the eastern Mediterranean. Every time the myth describes her as crossing a strait in her wanderings from one land to another, the strait was named "Bosporus" (meaning "cow-ford").

First she travelled to the western shore of Greece, but the sea between it and Italy was too wide for her to cross. (It is still called the "Ionian Sea" in her honor). She then went north and east, traversing the northern shore of the Black Sea and south to the Caucasus from where she crossed into the Crimean peninsula by way of the "Cimmerian Bosporus" (now known as Kerch Strait). Then she moved into Thrace and crossed the narrow strait into Asia Minor. This is the "Thracian Bosporus" and it is the only ancient Bosporus that retains its name today. It is the Bosporus

on whose shores Istanbul stands.

Then she travelled eastward and southward to India, back to the west through Arabia and crossed the narrow strait at the southern end of the Red Sea into Ethiopia on the upper Nile. This strait is the "Ethiopian Bosporus," now known as "Bab-al-Mandab." Finally, she moved north into Egypt, where she bore Zeus's son and found rest (according to the Greeks) as the Egyptian goddess Isis.

Some think that Io is actually a Moon goddess. The curved horns of the cow represent the crescent Moon. The crescent is set in the sky where the numerous stars (the eyes of Argus) watch over her. All the stars fade when the Sun rises, however, so that the Moon is free to wander over the sky, making a complete circle each month just as Io circled the eastern Mediterranean.

(Keep the thought of Io as a Moon goddess for what follows, now, as we turn back to astronomy.)

In January, 1610, the Italian scientist Galileo Galilei (1564-1642) discovered four dim star-like objects in the neighborhood of Jupiter, making use of a telescope he had devised — the first to be turned on the sky. As he watched from night to night, it was clear that the four objects circled Jupiter just as the

Moon circled Earth. The objects therefore came to be thought of as "the moons of Jupiter."

The German astronomer Johann Kepler (1571-1630) suggested they be called "satellites," from a Latin term for parasites who are hangers-on of rich or powerful men in the hope of gaining occasional crumbs in the way of money or preferment. The term came into use and is much preferable to the word "moon," since that had better be left as the name of Earth's satellite and no other. (Nevertheless, I wrote a book more than thirty years ago named *Lucky Starr and the Moons of Jupiter*, a title that has embarrassed me ever since.)

Naturally, the four satellites needed names, and Galileo tried to call them "the Medicean planets" in honor of Cosimo II de Medici, Grand Duke of Tuscany (1590-1621), who was Galileo's patron at the time. Fortunately, that didn't stick and they are called the "Galilean satellites" instead, a much better term.

The German astronomer Simon Marius (1573-1624), who saw the satellites soon after Galileo did, gave them each a mythological name. He named them after four individuals who experienced the embraces of Zeus (whom the Romans identified with their god, Jupiter). He named them, in order

of increasing distance from Jupiter, "Io," "Europa," "Ganymede," and "Callisto."

I have told you about Io. Europa was a Phoenician princess who Zeus, in the form of a bull, carried off to Crete. Callisto was a nymph who bore a child to Zeus and was therefore changed into a bear by the indignant huntress-goddess, Artemis, who insisted that the nymphs serving her remain virgins. When Callisto's son, Arcas, having grown into a man, hunted her down and was about to kill her, Zeus turned him into a bear, too, and placed them both in the sky as constellations.

As for Ganymede, he was a handsome Trojan prince who also suited the eclectic tastes of Zeus. (The ancient Greeks had no objection to bisexuality among their gods). In the form of an eagle, Zeus carried Ganymede to Olympus to serve him as cup bearer.

Why did Marius pick those particular names rather than those of Zeus' other lights-o'love? A matter of random choice, I suppose.

Ganymede is the brightest of the Galilean satellites, with a magnitude of 4.5, so Marius, with the casual sexism of the time, gave it the masculine name. (All four Galilean satellites are bright enough to be seen by the unaided eye, but they are drowned out in the glare of

nearby Jupiter.) The three female names were distributed, I suspect, randomly.

This brings us to one of those coincidences I love. (As those of you who have been following my essays down through the years know, I ardently collect coincidences in science and history. I attach no mystical importance to them. They are simply coincidences.)

Io, remember, is a nymph whose mythical history can be viewed as an interpretation of the astronomic behavior of the Moon. Isn't it strange, then, that a particular satellite should be named Io at a time when absolutely nothing was known about it but its existence, its brightness, and its motion about Jupiter — and that it should turn out to be an almost exact twin of the Moon in several ways?

To begin with, the Moon has a diameter of 3470 kilometers (2160 miles) while Io has a diameter of 3630 kilometers (2255 miles). Io's diameter is only 4.67 percent larger than the Moon's. No other body in the Solar system is as close to the Moon in diameter as Io is.

Again, the average density of the Moon is 3.341 grams per cubic centimeter, whereas the average density of Io is 3.55 grams per cubic centimeter. Of all the sizable bodies

of the Solar system, Io is the only one with a density so close to that of the Moon. Both bodies, presumably, are made up largely of rocky materials. Neither has a large metallic component (as Earth, Venus and Mercury do), or a large icy component as other large satellites do.

Of course, since Io is a little larger than the Moon and a little denser, too, Io ends up about 1.2 times as massive as the Moon. That's still fairly close.

Next, let's consider the distance of each satellite from its primary (that is, from the planet it circles). The distance of the Moon from Earth, center to center, is, on the average, 384,401 kilometers (238,867 miles). The distance of Io from Jupiter, center to center, is, on the average 421,600 kilometers (262,000 miles). That means that Io is 9.7 percent farther from Jupiter than the Moon is from the Earth. That's not extremely close but it is reasonably close.

Only one other satellite imitates the Moon more closely as far as distance from the primary is concerned. Dione, one of the satellites of Saturn, is 377,000 kilometers (234,000 miles) from Saturn, center to center. The difference in distance from the primary between Dione and the Moon is only 2.1 percent. Dione, however, is only about 1120

kilometers (700 miles) in diameter, so that it is a small object compared to Io and the Moon.

But the twinship only goes so far. In respects other than size, density, mass, and distance from the primary, the two twins are not similar at all.

To begin with, they circle planets that are enormously different from each other. Jupiter is far larger than Earth, having a mass 318.4 times that of Earth's.

Io may be at roughly the same distance from Jupiter that the Moon is from Earth, but, under Jupiter's mighty gravitational lash, it travels much more quickly. The Moon lazies along its orbit at an average speed of 1.03 kilometers per second (0.64 miles per second or 2304 miles per hour). Io, on the other hand, to keep from being dragged down to destruction by Jupiter's strong attraction, must move along at a speed of 17.4 kilometers per second (10.8 miles per second, or 38,880 miles per hour). In other words, Io moves through space, relative to Jupiter, 17 times as fast as the Moon does relative to Earth.

Since they are at similar distances from their primaries, each satellite must travel a similar distance in orbit in order to make one complete circle about its primary. The Moon's orbit about Earth is

1,207,630 kilometers (750,421 miles) long. Io's orbit about Jupiter is 1,324,500 kilometers (823,000 miles) long.

The Moon completes one orbit about Earth (relative to the stars) in 27.32 days — which is the length of the "sidereal month," where "sidereal" is from a Latin word meaning "star." Io, however, completes its slightly longer orbit, relative to the stars, in only 1.77 days. Io whirls about Jupiter 15.4 times while the Moon makes a single circuit about the Earth.

A planet does not pull upon its satellite all in one piece. The near side of the satellite is closer to the planet, and is therefore attracted more strongly than the far side of the satellite. As a result, the satellite is stretched in the direction of its primary. There is one slight bulge toward the primary, and another away from it, and this is the "tidal effect."

The extent of the tidal effect becomes greater as the gravitational pull of the primary increases, as the size of the satellite increases, and as the distance between the two decreases.

The existence of a tidal bulge interferes with the rotation of a satellite. The gravitational pull of the primary drags at the bulge as the satellite rotates, and successive

portions of the satellite's surface swell toward the primary and then subside. The internal friction produced by such movements in the body of the satellite bleeds away rotational energy, converting it to heat. The rotation of the satellite slows and eventually stops (relative to its primary) so that the bulge remains pointed permanently toward and away from the primary and there is no further drag.

The Moon produces tidal bulges on the Earth, but the Moon is only 1/81 as massive as the Earth so that its gravitational pull is quite weak, while the Earth's rotational energy is quite large. Although the Moon's tidal effect has slowed the Earth's rotation and made the day considerably longer than it used to be in eons past, it has not yet managed to stop Earth's rotation altogether, relative to the Moon.

The Earth's tidal effect on the Moon, however, is much stronger than the Moon's on Earth, and the Moon has considerably less rotational energy than the Earth has. As a result, the Moon's rotation has stopped, relative to the Earth, and it faces only one side toward us. However, although the Moon does not rotate relative to the Earth, it does rotate on its axis, relative to the stars. Its sidereal day is 27.32 Earth-days long, which is exactly equal to its sidereal month (some-

thing that is always true of a satellite that has one side perpetually facing its primary).

Io's tidal effect on super-massive Jupiter is insignificant, but Jupiter's tidal effect on Io is enormous — a couple of hundred times that of Earth upon the Moon. It is not at all surprising, then, that Io, and, indeed, the other Galilean satellites as well, face one side to Jupiter at all times. Io's sidereal day therefore equals its sidereal month and each stands at 1.77 Earth-days.

Tidal effects tend to pull a satellite into the equatorial plane of the primary, if it is not there already, and to make its orbit circular, if it is not that already. Unless the tidal effect is tremendous, however, the change is a slow one.

The Moon, for instance, is not in Earth's equatorial plane but is tipped about 23 degrees to it. And the Moon's orbit is distinctly elliptical, with an eccentricity of 0.055. This is not a very great eccentricity, being less than that of the orbits of Mars and Mercury, and being about equal to that of the orbit of Saturn. Still, it is more than three times the eccentricity of Earth's orbit about the Sun, and is greater than the eccentricity of any of the orbits of the other large satellites.

With time, the Moon's orbit may become more circular and may approach Earth's equatorial plane.

However, the Moon is so distant from Earth, which is so small compared to the giant outer planets, that the tidal effect is comparatively small. Add to this the complicating factor of the Sun's pull from its comparatively short distance of 149 million kilometers (93 million miles), and we would expect the correction of the Moon's orbit to be a long-drawn-out process indeed.

The far greater tidal effects of Jupiter on its Galilean satellites, and the lesser effect of the more distant Sun, makes the situation different there. The orbits of the Galilean satellites are all very close to Jupiter's equatorial plane, and their eccentricities are very close to zero.

The tidal effect of Jupiter increases rapidly as the distance of a satellite decreases. It is thus far stronger on Io than on any other Galilean satellite, and its orbit would be expected to be more nearly in the equatorial plane and more nearly circular than would be true in the case of the other three. (In fact, Io suffers a greater tidal effect, thanks to the enormous mass of Jupiter and to its own large size for a non-planetary object, than any other body in the Solar system.)

Now let's consider the combination of eccentricity and tidal effect. The tidal effect decreases as the

cube of increasing distance. Because of the Moon's comparatively large orbital eccentricity, it is as close as 356,000 kilometers (221,000 miles) from Earth's center at its closest approach ("perigee") and is as far away as 407,000 kilometers (253,000 miles) two weeks later at its point of farthest recession ("apogee"). The tidal effect of Earth upon the Moon is therefore 50 percent greater at the Moon's perigee than at its apogee.

We can imagine the Moon's surface slowly straining into a slightly smaller bulge and then back to a slightly greater one. It would be a kind of accordion effect with a total period from greatest bulge to greatest bulge of one sidereal month, or 27.32 Earth-days.

The Moon's twin sister, Io, has a tidal effect upon it that is much greater than that of Earth on the Moon, but if its orbit were precisely circular (as, from what I have said, you would think it should be) there would be no accordion effect at all.

However, Io's orbit is slightly eccentric and will stay so because there is interference from other sizable nearby bodies. The gravitational pull of Europa, Ganymede and Callisto (particularly Europa, which is nearest) exert perturbing effects on Io's orbit that drive it away from the perfectly circular.

The means that there is an

accordion effect on Io, and, indeed, on all the Galilean satellites. However, the effect is stronger and more rapid, the closer the satellite is to Jupiter. Thus, Callisto accords once every 16.69 days, while Io does so, much more strongly, once every 1.77 days.

These accordion effects use up rotational energy, and this is converted into heat. In effect, then, the Galilean satellites are heated by the tidal effect, and they are heated more strongly the closer they are to Jupiter. Io is more strongly heated by tidal forces than any other body in the Solar system.

This explains the densities of the satellites as we now know them. Callisto, the outermost Galilean, has an average density of 1.83 grams per cubic centimeter, and must be composed mostly of icy materials. Ganymede, the next one toward Jupiter, is more strongly heated and has lost some of its ice, ending with an average density of 1.93 grams per cubic centimeter. Europa has lost still more ice and has a density of 3.04 grams per cubic centimeter. Io, the most strongly heated, has a density of 3.55 grams and must be composed of rocky material entirely — like our Moon.

So now it begins to look as though Io, which, to start with, seemed to be our Moon's twin, is a unique body that might well be

worth a close look.

The first chance for a close look at Jupiter and its satellites came with a probe, "Pioneer," that was launched on March 2, 1972, and that made its closest approach to Jupiter on December 3, 1973. It was designed to take photographs of Jupiter itself rather than of the satellites, but even so it found out something.

Considering the surface gravity and surface temperature of the Galilean satellites; it was not to be expected that any one of them would have a substantial atmosphere. Io was expected to be as airless as its twin, the Moon. (Bodies of comparable size such as Titan, a satellite of Saturn, and possibly Triton, a satellite of Neptune, together with the small planet, Pluto, have atmospheres that are fairly substantial, but they are all considerably colder than the Galilean satellites and can hold on to the correspondingly more sluggish molecules.)

However, Pioneer 10 sent radio signals to Earth, and when some of these happened to skim by Io, they were distorted in a way that indicated the presence of an ionosphere in the neighborhood of the satellite — a region rich in charged particles. This, in turn, seemed to indicate the presence of an atmosphere generally, even if only a very thin one.

The companion probe, Pioneer 11, launched on April 5, 1973, made its closest approach to Jupiter on December 2, 1974, but added nothing to this picture. Still, astronomers had grown curious and had begun to zero in on Io from their Earth bound observatories.

In 1973, they found definite signs that there was a thin cloud of sodium vapor about Io spreading out to a distance of hundreds of thousands of kilometers. Later, they found that there was an even more extensive cloud of sulfur and oxygen about Io. This cloud, in fact, filled all of Io's orbit, so that it was a thin doughnut of vapor through which Io plowed.

Nothing like this had been found anywhere else in the Solar system, and it seemed to match, in strangeness, Io's ferocious accordion effect. It couldn't be a coincidence that the particular world that experienced the strongest tidal distortions should also be the only world to fill its orbit with gas.

Since Io simply couldn't hold a static atmosphere, it could not merely be bleeding vapor out of such an atmosphere into its orbit. Even if it had started with an atmosphere, that would long since have bled into the orbit and disappeared. Since the doughnut of vapor still exists today, it must be that Io is producing vapors contin-

uously from its inner structure.

Toward the end of the 1970's, two new Jupiter probes were sent outward, probes that were far more sophisticated than the Pioneers. "Voyager 1" was launched on September 5, 1977 and passed Jupiter on March 5, 1979. "Voyager 2" had been launched two weeks earlier, on August 20, 1977, but did not pass Jupiter till July 9, 1979.

While they were on their way, astronomers were studying the accordion effect, and it seemed to some that Io would be heated so strongly that heated material would burst through its outer crust, forming volcanoes that would spew material into the airless void above Io's surface.

What astronomers had naturally expected of a world the size and density of the Moon, was a surface like that of the Moon. However, as Voyager 1 passed within 19,000 kilometers (12,000 miles) of Io, the photographs of the surface turned out to be very un-Moonlike indeed. The surface of Io showed few craters and was a melange of red, orange and yellow, with a little black and white.

What's more, there were indeed volcanoes — and not just dead ones like those on Mars and (probably) Venus. There were volcanoes that were actively spewing out material. Nine active volcanoes were counted,

and Io proved to be the only world in the Solar system, other than Earth itself, to have them. When Voyager 2 passed, a few months later, eight of the nine were still erupting.

They were erupting sulfur dioxide, which broke up into sulfur and oxygen under the lash of the ultraviolet light from the distant Sun. Some of the sulfur falls as a kind of reddish snow, piling up five or six centimeters per year. It filled in most of the craters, so that only the latest still showed blackly, and it was what gave the surface its color. Some sulfur vapor along with oxygen formed a kind of excessively thin atmosphere over Io — perhaps a billionth as dense as that of Earth — and this leaked slowly out into space to form the doughnut of sulfur and oxygen vapor through which the satellite passed.

Worlds have a habit of having different hemispheres. Earth has one hemisphere that is almost all ocean, while the other is crowded with land. The Moon has all its maria in one hemisphere, none in the other. Iapetus has a dark hemisphere and a light one. Mars has a cratered hemisphere and a non-cratered one. In the same way, Io has a hemisphere with large volcanoes and one with small ones. None of the reasons for any of these divisions are known.

Io's volcanoes not only color its own surface but that of neighboring

satellites as well. Inside Io's orbit is a tiny satellite, Amalthea. It is only 181,300 kilometers (112,000) miles from the center of Jupiter, and circles the planet in 12 hours. It is only about 240 kilometers (150 miles) across, and it seems to be colored red. Undoubtedly, it has caught some of Io's sulfur-snow. There are traces of sulfur on the surface of Europa, too, which is the satellite next farther out from Io.

We have a chance for another look at Io. There are plans for a probe named "Galileo," which will be the most sophisticated one yet. It was originally slated for launching in 1982, but there were delays, not the least of which was occasioned by the "Challenger" disaster. Now it is scheduled to be launched in late 1989, to take a long roundabout path, and to reach Jupiter in 1995.

It will swing by each of the Galilean satellites, several times in the case of the outer ones. Io will get only one pass, however, because it is too close to Jupiter to take too many chances of damaging Galileo's delicate instruments by Jupiter's huge magnetosphere with its dense collection of charged particles.

That one pass will be a lulu, however. It will come within 1000 kilometers (620 miles) of Io's surface; it ought to catch some of the volcanoes in beautifully detailed action.

How splendid that would be!

In her first story here since "The Incredible Christmas Wish" (February 1988), Nancy Etchemendy offers a compelling tale about a young woman, a university student, whose odd dreams of wind and ships gradually turn into something far stranger and more terrifying.

THE SAILOR'S BARGAIN

By Nancy Etchemendy



AM WHIMPERING IN MY sleep again. Across the abyss between our beds, I hear my

friend Mary Fairfax calling my name.

"Electra. Electra! Wake up."

But I can't seem to separate her voice from the cobweb fabric of the dream. Neither can I separate the roar of the wind from the roar of my own blood, or tell which is real and which imagined.

"Wake up!"

Fairfax crosses the dark room, grabs my shoulders.

In my dream I kneel on the rain-swept deck of a wooden ship, a ship with many sails, huge and dark. Waves crash over the bow, and the masts groan as if they are about to splinter. In my dream the wind shakes me until my teeth clack. It tears at me, and it laughs, and it says, *A bargain is a bargain, part and parcel.*

Then I realize that the bow of the ship is really the chapel of the

orphanage in San Francisco where I grew up. I am taking part in the celebration of some skewed Mass. A canticle response rises to my lips. It is part of no prayer I have ever heard. I do not know where it came from. *My days are swifter than a weaver's shuttle, and are spent without hope. O remember that my life is wind.*

At once the chaos of the dream falls away, a black mirror shattered by words, and I am sitting up, staring into Fairfax's face. Dim light from a streetlamp seeps through the window. In it I can see the disheveled spikes of her hair, like a fiery halo, which I have envied since we were children, and the wrinkled impression her pillow has left across one of her cheeks. The orphanage and the chapel and the ship have disappeared. It has happened just the same way almost every night for two months.

"Shit," says Fairfax. "I can't take any more of this. Either get some help, or I'm moving out."

I press the sheets against my forehead to soak away the dream sweat. I look around the room. It takes me a moment to realize that I'm not seeing the adobe walls of the dormitory at Our Lady of the Harbor. It's been almost two years since Fairfax and I left the Catholic orphanage. Now we live on the campus at Las Piedras University, in a "temporary dorm" — really just a trailer with several sleeping cubicles and a big bathroom.

Outside I hear the night wind rushing from the land to the ocean, prowling around beaverboard corners, scrabbling at the cheap window frames. This little box of a shelter feels like paper compared to Our Lady of the Harbor, with its thick walls, oak beams, and heavy, nail-studded doors.

"I don't want any help," I say. "I've made up my mind this dream is never coming back again."

But Fairfax knows me too well.

She sighs and switches on my chipped bedside lamp. In its comforting yellow glow, our room is a perfect illustration of the differences between us. My side is cluttered with treasures I have gathered at random from secondhand stores and flea markets, while hers is stark and clean as a monk's cell. I buy wobbly tables, hats with holes in them, and boxes full of crystals and buttons. Fairfax prefers modern European prints and slim watches with no numbers on their faces.

She sits beside me on the bed, naked except for a pair of kelly green satin bikinis and a thin gold necklace. She refuses to wear nightclothes.

They get tangled around her like ropes in the night, she says, and they're good for nothing.

She hugs herself in the cool night air. Her skin is covered with freckles and goose bumps. "Nobody, not even you, can just decide not to have a dream. You know as well as I do it'll be back again. This isn't normal, Electra. Something's wrong."

She looks down at the linoleum floor, looks up again, her chin held very high. "I think I really mean it. You and your nightmares are driving me crazy. If you don't talk to somebody about this, I'm moving out."

She turns off the light. I listen to the slap of her feet on the floor as she walks back to her bed. I pull the covers up and stare out the window at the thrashing treetops. In her own way, she is just trying to help.

The next morning, a Tuesday, Fairfax is sitting in her bathrobe playing her cello when I leave our room. I wave good-bye, as usual; she nods vaguely, as usual, without taking her eyes from the music.

I have an early class on Tuesday, number theory, the only course I am taking this quarter. In June, when the summer term opened, the elegance and purity of number theory delighted me — made the world seem acute, well formed, and larger than humankind. But now it is August. For two months, dreams of wind and ships have robbed me of sleep. Often the concepts our professor introduces make no sense to me, and sometimes proofs that would have seemed obvious before escape me.

This morning, just as I expect, I doze through the class. When the hour is over, the professor takes me aside. "Electra, I regard you as one of our most promising mathematics majors. But lately I've noticed a certain . . . shall we say . . . lack of concentration. Is anything wrong?"

"No. No, nothing at all," I say, staring at my feet. Some men — most men, in fact — make me nervous. In front of this male teacher, I'm an even more inept liar than usual.

He frowns and rubs his neck.

"Sorry," I mumble. "I'm late. I really have to be going."

I hurry out of the classroom toward the cafeteria, where I usually eat breakfast after class. On my way I pass the campus chapel and hesitate there, trying to compose my rattled nerves. In its distant beginnings, Las Piedras was a Catholic school. Now it is secular, but the chapel remains for those who wish to use it. I have been inside it often for Mass.

I stop on the terrazzo plaza in front to look up at the glit mosaic on the chapel's facade, of the Lord Jesus Christ walking on the water after He had calmed the storm. For no reason at all, gooseflesh rises on my arms. It is a cloudless, brilliant day, and a warm breeze drifts inland from the ocean, heavy with the smell of seaweed. It blows my hair across my eyes, so that all the world becomes the color of sand.

In that moment the world reels and folds, and I am plunged into my nightmare without warning. This time I seem to be looking down on the black ship from midair. It is the same ship, wooden, with seven or eight square sails. Towering waves ram her broadside, and she heels and screams. I gasp for air, afraid that I will die if she dies. I have had the dream many times before, but never like this, wide awake, in the midst of a daily routine. I try to claw my way back to the solid reality of the plaza and the glittering mosaic.

But when I come to myself, I am not on the plaza as I expect to be. I am lying prone on a broad stairway with my arms wrapped around a wooden post — a communion rail, I slowly realize. I look up. I recognize the shape of the vaulted arches above my head, and the stained-glass depictions of the Stations of the Cross. I am inside the chapel.

I stumble to my feet, dizzy and disoriented. Beyond the rail the altar stands bare. The altar cloth lies on the floor beneath it, a heap of embroidered laundry. A huge Bible lies beside it, stricken from its stand, pages bent and torn, spine broken. I turn and face the pews. Missals lie scattered in the aisles. Smoke rises in ghostly ribbons from the wicks of a dozen extinguished votive candles.

My days are swifter than a weaver's shuttle, and are spent without hope. O remember that my life is wind. The words echo inside my skull.

A cold draft moans through the nave, ruffling the pages of the scattered missals; or is it someone laughing? The hair on the back of my neck stands up. My heart quickens, a hundred beats a minute, 110, two every second. I bolt from the chapel, through the double doors, and into the sunlight.

I am halfway across the quad before I can overcome my panic enough to stop running. I pant, and glance around to make sure no one has seen my windmilling flight. After a moment I force myself to walk slowly, deliberately, toward the cafeteria, repeating in a low whisper, "I am tired. I must have imagined it all. I am tired. . . ."

When I reach the cafeteria, I buy a sugar doughnut and black coffee. While I stand in line at the cash register, a hundred wild thoughts jostle against each other in my brain, trying to dislodge my careful concentration on the mundane matters of silverware and correct change.

It doesn't matter what I tell myself. I know what I saw was real. The chapel looked as if a gale had been set loose inside it. It looked as if my nightmare had come to life. But this is childish nonsense, and I am not a child anymore. I am twenty years old, twenty-one in November — too old to be frightened by dreams, especially dreams like these. I have never been on a ship in my life. And as for the wind, I have always loved being out in it — flying kites, or even just walking, wrapped up in a snug coat and hat. I cannot recall any reason to fear either wind or ships.

But while I count out two quarters, a dime, two nickels, and place them in the cashier's hand, the great fact of my life runs its bony fingers up my spine, as it has countless times before. I will never be an entirely known quantity to anyone, even to myself. I may never know where the nightmare came from. I am no ordinary person. I am not even an ordinary orphan. I am, in fact, a foundling.

I sit down at one of the tables outside, and watch analytically while tears splash into my steaming coffee. I can't bring myself to look up and see who is pulling out the chair on the other side of the table.

"Hey."

It is Fairfax. She places the palm of her hand on my forehead, and pushes gently, until my face is tilted up toward hers.

"What's the matter?" she says.

I shake my head. I'm not sure I can talk yet, not even to Fairfax. But an instant later the words come out in an unexpected rush.

"I... I was walking across the plaza. I had the dream." My voice cracks, and I stop, feeling helpless.

Fairfax wrinkles her forehead. Is it concern or incredulity? "About the wind? In the middle of the day?"

I nod miserably. "I had the dream, and when I woke up, I was inside the chapel. It was a mess. Fairfax, the wind had been blowing inside the chapel. It blew out the candles. It tore the cloth off the altar. What am I going to do?"

She smiles. It is incredulity. "Naw," she says. "It's just a dream. How could a dream do that? Come on, now. You know you were imagining things."

"But I wasn't. You don't know what it was like. I couldn't have imagined it."

Fairfax presses her lips into a thin, determined line and takes me by the arm. "All right. Show me," she says.

Tension arcs between us as we walk silently back toward the chapel. When we reach it, Fairfax pulls open the big wooden doors, and we peer into the nave. Even before my eyes adjust to the dim light, I know I was right. The chapel is alive with voices — high, angry, frightened. "You're certain you didn't see anyone? Who would do such a thing?"

Fairfax's eyes grow huge as she surveys the damage. She grabs my arm and hustles me back across the plaza to a bench beneath a palm tree. "Electra, I think we should talk," she says.

"I told you," I say. "It really happened."

She shakes her head violently. "This couldn't possibly have any connection with your dream. Be rational. There's got to be some other explanation."

"No. It has something to do with me. I know it."

"Don't be crazy. It's just a coincidence. Maybe it's vandals. Or somebody playing a practical joke."

"No. It's me. The wind is trying to get me."

"Fine. If that's really what you think, then you should go see a doctor." She almost shouts it.

"A doctor can't help me!"

Fairfax closes her eyes and silently mouths the numbers one to twenty. Her temper is quick and terrible. Sometimes, even the counting doesn't keep it from getting out of control.

When she reaches twenty-one, she gets up, still red-faced, and slings her book bag over her shoulder. "I'm late for my class," she says, biting the words off and spitting them out. She spins, and stalks off across the plaza, leaving me alone beneath the tree.

I DON'T SEE her again till after dinner, when she shows up at the trailer dorm with a familiar grin on her face. I have seen this grin before — the broad one that means she is pleased with herself and bursting to tell me about it.

"Sorry about this morning," I say. I am sitting cross-legged on my bed, working proofs and watching a talk show on my television, an old

black-and-white with all the dials missing.

She flounces down beside me. "Oh, forget about that. I've got a great plan."

I look at her warily. Her last great plan was for me to sell my collection of comic books and put the money down on the used Alfa Romeo.

"I've spent the whole day getting all the details worked out. Look, this flimsy trailer is a terrible place for anybody who's having nightmares about the wind. I think we should both get out of here."

I frown. She is so impulsive. "Where would we go?"

Fairfax opens her book pack and pulls out a folded sheet of binder paper with a message neatly printed on it in soft pencil. "Room and board, reasonable rates. Dr. and Mrs. Axelrod Desmond, 713 Melville Street, 322-1732."

"What's this?"

"You know my physics instructor, Tony DiMarini?"

I nod. She has mentioned him once or twice, mostly in connection with his niceness. Fairfax, a music major, is in the midst of struggling through a required physics course. She told me when she signed up for it that she thought summer would be the best time to take it because instructors have more free time to work with students then.

"Well, I ran into him after class today," she says. "He mentioned that there are a couple of rooms open at the place where he lives. It's an old house near campus. Interested?"

I chew my pencil eraser. The whole thing sounds to me like some kind of ploy on DiMarini's part.

"It belongs to a retired English professor and his wife. They rent out the rooms on the top story for practically nothing, to any students who are willing to help with chores and yard work."

"Sounds suspicious," I say. "It's probably a real dump or something. Either that or the yard work's a full-time job."

Fairfax breathes loudly through her nose. "Electra! Don't be that way. I wouldn't get you into anything like that. It's a wonderful place."

I squint at her, suddenly aware that she's holding something back. "How do you know it's a wonderful place?"

"Look . . . uh . . . I telephoned Mrs. Desmond. I went over to see it this afternoon. Oh Electra, you'll love it! It's huge. It's made of solid stone. And the Desmonds are terrific. They didn't want to take the deposit at first,

not till they'd met you. . . ." Her voice trails off. "Uh-oh," she says. She touches her lips with her fingertips.

"You mean you *rented* it? Without even asking me?"

"I knew you'd love it, I just knew it, and if I didn't take it right then, somebody else would. Tony had to put in a good word for us, as it was. Oh Electra, won't you at least try it for a while?"

Fairfax is glowing with excitement. Her eyes shine like the sun on a green sea. At times like these she is practically irresistible. I don't suppose I can really blame DiMarini for trying to get closer to her.

I look at the address again, trying to be critical: 713 Melville Street. In spite of myself, I picture a high, bright room with a view: 713. Seven for good luck, thirteen for bad. I think of the way our dingy, cramped trailer shudders in the least breath of wind. I really do hate it. Fairfax is right. It is a very bad place for someone with dreams like mine.

"Oh, all right," I say at last.

Fairfax and I spend the next morning at the university housing office, getting out of our dorm arrangement. In the afternoon we make the short trek to Melville Street, up a hill north of campus. True to Fairfax's description, number 713 is a three-story house with thick fieldstone walls and a broad porch. An ancient willow tree guards the front yard, its roots buckling the sidewalk into tilted plates. We walk up the steps and rap on the heavy front door, but get no answer.

"I guess the Desmonds aren't home, but trust me," says Fairfax. "You'll love it."

I nod. "Probably right," I say, with a faint sense of discomfort. I don't like being pushed into such a big change. But as far as I can tell, Fairfax has been completely truthful about the house. It looks huge, sturdy and inviting. Besides, now that the paperwork with the housing office is finished, it will be easier to move than to stay in the dormitory.

The following Saturday, Fairfax and I collect cardboard cartons from supermarket trash bins and pack our belongings in them. She fills six boxes; I fill fifteen, even after I have thrown away everything I can bear to part with. I wish possessions were not so important to me. Sometimes I suspect myself of trying to build a past with them, article by article.

Fairfax sits on the floor, tossing items from my "must keep" pile into the open cartons, stopping now and then to examine something that

catches her interest. She tries on a sequined black glove, crooks her little finger as if she were drinking tea, and laughs.

"Where's the mate to this?" she asks.

"As far as I know, it's never had one," I reply.

She opens an old cigar box and holds up one of the many sand dollars she finds inside it. "I remember the day we gathered these!" she says. "On that beach up north where Sister Michael and Sister Mary Rose used to take us camping." She half-smiles and tilts her head. "We were just little girls. You've saved them all these years?"

I smile and nod. Though I'll never really know, I imagine that Fairfax and I are a lot like blood relatives.

Tony DiMarini has offered to help us move. I've been thinking of him off and on, in a cranky and distrustful way. I imagine him as a handsome young professor in his thirties, neatly attired in an oxford-cloth shirt with the sleeves rolled up just so, like the men in after-shave ads. Someone suave and unscrupulous who is probably after the body of every pretty redhead on campus.

It is late afternoon when he taps on our open door. He clears his throat — says, "Hi, is this the right place?", and trips over something invisible as he walks into our room. While Fairfax and I help him up, my rakish image of him dissolves into one of herons, mostly their legs, knobby and impossibly fragile. He has frizzy blond hair, and there are holes in the seat of his jeans, through which I catch a glimpse of plaid boxer shorts. The collar of his rumpled shirt is buttoned, and his Adam's apple jumps up and down above it like a skinny, hairless mouse every time he speaks. I like him almost immediately, perhaps because he is not at all what I expected. If he is attracted to Fairfax, he will have to work hard to get her.

Tony's car is a convertible with a dangling front bumper and an engine that sounds like a freight train. "Nineteen sixty-four Bonneville. They don't make them like this anymore," he says, proudly tapping the hood. The car is so huge that all twenty-one of our cartons fit easily into the backseat and the trunk. There is plenty of room for the three of us, and Fairfax's cello, on the bench seat in front.

When we reach the new house, Lavinia Desmond — tiny, platinum-haired, and dressed in summer woolens — greets us at the door.

"Roddy. Roddy!" she calls, as she leads us through the vestibule. "Mary Fairfax and her friend have arrived."

Roddy pokes his head around a corner, plucks a briar pipe from his purplish lips, and waves it gleefully. "Hello, Mary." He gazes in my direction and lifts a bushy eyebrow. "And you must be . . . ?" he says.

"Electra Thorpe."

"Of course. Lovely, lovely," he cries, clasping my hand between his.

"I've already listed the house rules for Mary, my dear," says Lavinia as she leads us up the polished hardwood stairs. "But for your benefit I'll mention them again. No parakeets. I can't stand cleaning the little doo-dahs off the walls. Try to keep the noise to a minimum after two in the morning. And no group baths."

"Lavinia, my dear, you're so priggish," says Roddy.

Lavinia rambles on, unperturbed. "Clean sheets and towels once a week, meals included, \$150 a month, cash please, and we'll probably ask you to do a few things around the kitchen and the garden."

We have reached the third floor. We stand in a narrow hallway with two doors on the right and two on the left. It is a warm day, but even this close to the roof, the house is cool. Through a small, round window at the far end of the hall, I can see the branches of the willow tree shifting in the afternoon air, dappling the walls with green shadows.

"Bathroom is the last door on the right," says Roddy. "This is Tony's room." He raps his knuckles on the first door to our left, grins at Fairfax and me, winks broadly at Tony.

Lavinia clucks, rolls her eyes, and says, "Men."

She points out the remaining two rooms, one on either side of the hall. "These are yours, my dears, though you'll have to decide for yourselves who gets which."

She holds up identical keys, the old-fashioned kind with a hollow handle and a wide, intricate prong at the bottom. "House keys," she says, and hands one to each of us. Then she presses her index finger to her cheek. "Let me see. What have I forgotten?"

Tony smiles. There are prominent dimples in his pale cheeks. "The list of hours, maybe?" he says.

"Ah yes. Breakfast at seven, supper at eight. You're on your own for lunch. But there's tea in Roddy's study every day at five. You're invited, of course."

Then she plucks at Roddy's shirt sleeves. "Come along now. I need you in the kitchen to open some jars for me."

"Lovely, lovely," he says, waving as she tugs him toward the stairs. "So nice to have you here." His voice bounces off the hardwood as he disappears. The sound of it fills me with the same kind of pleasant warmth I used to feel at the orphanage when Sister Mary Rose rocked me after bad dreams.

Tony and Fairfax and I stand alone, grinning at each other in the dusky hallway. Maybe everything will be all right.

I choose the room next to the bathroom, which is just as high and bright as I imagined. The walls are pale green, and the ceiling is slanted. The window is made of small, square panes of beveled glass, and has a wide wooden seat beneath it. If the room has any disadvantage at all, it is a view of the sea. In past years I would have liked nothing better. But since the dreams began, the ocean makes me uneasy at times. I would rather take the other room, the one next to Tony's, which faces the street. But I'm afraid that if the nightmare comes again, I'll disturb Tony, and I would rather he never found out about it.

At first I live on edge, waiting for the first bad night, anticipating it every time I turn out the lights. But days flow past, and the dream does not return. I begin to relax in spite of myself. We help Roddy patch the roof. I laugh and hammer shingles. I stand square-shouldered and look down on Las Piedras, feeling like the Queen of the Mountain.

As August turns to September, we help Lavinia pick pomegranates. We crush half the berries into sterilized stone crocks, and Lavinia adds yeast and sugar to start them fermenting into wine. "The finest ritual of the year," she says. We stand in a row at the sink, all of us splattered with crimson juice, tapping feet, knives, and wooden spoons to the beat of rock music from Lavinia's portable tape deck. Tony grins wickedly as he reaches over to dab my nose with his dripping red finger. The kitchen is filled with delicious steam, and the smell of boiling stoneware.

The fall quarter opens at school. I embark on predicate calculus and non-Euclidean geometry, once again eager and excited by the elegance of mathematics. Time softens the edges of my recollections. Perhaps the nightmare has gone forever; perhaps it wasn't really so bad after all. Only once in all this time does a faint echo of the old terror rise up. One afternoon as I walk home from classes, I notice street names impressed in the concrete curb at the corner just before the house. I'm surprised to

discover that the name on the Melville curb does not say Melville. It says "Loma de Viento." I don't speak Spanish. I don't know what the words mean. Yet as I stand looking down at them, a tingle runs up my scalp. I shake myself and walk home quickly, feeling foolish.

On a chilly evening in mid-October, Tony and Fairfax and I don sweaters and drag wicker chairs from the porch to the front lawn. Warming our fingers around mugs of hot chocolate, we watch a total eclipse of the moon. Through shoals of broken clouds, the moon shifts slowly from silver egg to red fingernail, and Tony talks. In a low, drowsy voice, he tells about his work at the physics lab, where they are experimenting with niobium balls, trying to prove the existence of free quarks. We argue, smiling, about whether physics is a field of mathematics, or mathematics is a field of physics. Fairfax asserts that music is the essence of them both.

I keep waiting for him to move closer to her, put his arm around her, idly playing with her hair the way men do in paperback romances. But it never happens. In fact, he seems so intent on our discussion of physics and mathematics that he hardly notices anything else. Matters of the heart seem mysterious to me. I am nearly twenty-one years old and still a virgin. Sometimes I wonder if I should have stayed at Our Lady of the Harbor and joined the Little Sisters of Saint Camillus. Joining a religious order has never been very far from my thoughts. Often I perceive it as the only right and natural course. It is always Fairfax who convinces me that I should wait a little longer before deciding.

Later, alone in my room, I fall asleep thinking of Tony, his face animated in the glow of the stars and the red moon, the smell of cocoa on his breath, like a little boy. And as hour moves into hour, the nightmare comes again.

This time the order of the dream events is subtly different from before. I huddle in the black chapel on the deck of the pitching ship. But now one wall of the chapel is a chain link fence like the one on the orphanage playground. Beyond it stands a man, familiar somehow, clinging to the fence. I can't see his face, but I think it is Tony, bearded, hunched in a sailor's pea coat.

"Electra!" he cries. And he chants the words. "My days are as swift as a weaver's shuttle, and are spent without hope. O remember that my life is wind." Suddenly I remember such a man from my childhood. It's not Tony. Not Tony at all.

Coming from his lips and not mine, the words have no effect. The wind laughs at him, howls at him. *A bargain is a bargain.* And something else, something new. *Almost of age. Almost mine now.* And it grabs me and spins me around till I scream.

I fancy I can hear the echo of that scream as I awaken. My window stands open, drifting slowly back and forth on its hinges. Under my nightgown, rivulets of sweat run down my ribs. That man. All these years he has lain buried in the clutter of other events, other people. How could I have forgotten about him?

Someone flings open the door. "Electra!" Tony stumbles into the pale rectangle of the doorway. "Jesus. . . ." The word comes out of him in a long whisper. "Jesus!"

The horror in his voice makes me look around. Nothing is where it used to be. Pictures have been blown off the walls. Books and papers are strewn everywhere. My bed is upended and lies, frame and mattress separate, on the floor behind me. My bedclothes stretch in a twisted rope from one corner of the room to the other. Feathers from my pillow fall through the air in lazy eddies.

"What's going on?" Fairfax appears behind Tony, hastily tying the belt of her robe.

I hear urgent footsteps on the stairway, and Roddy's voice. "Put that thing away, Lavinia! You'll kill us all." Someone flips the light on. Lavinia lurches into the room, breathless, waving a dusty pistol, and Roddy grabs it from her. Then everyone stands in shocked silence, staring at the wreck of my room.

Fairfax is the first to move. She runs to the window, sticks her head out, looks up and down the backyard. "I don't see anybody," she says. "We must have scared him away." She turns and helps me to my feet.

My head is still spinning from the dream. "It was nobody," I say. "Just the wind. The wind did it." I watch the color leach out of Fairfax's cheeks, and I start to shake. My teeth chatter. It is cold in the room. Without speaking, Fairfax untwists my blanket and drapes it around my shoulders. I feel her trembling; her hands are moist and chilly.

Tony, dressed in pajamas with tiny, faded fleurs-de-lis all over them, scrubs his knuckles across his hair. "The wind? How could the wind do this? It's not even blowing."

Fairfax snaps at him. "Can't you see she's half asleep and scared out of

"Have you ever thought . . . you know, there are people who can move things with their minds."

her wits? Of course it wasn't the wind. It was something else."

But Lavinia picks her way across the room and shuts the window. With great authority, she says, "Well, it's possible. We do get freak winds up here on the hill sometimes. They used to call this street *Loma de Viento*, you know, before they decided everything in the neighborhood should have a literary name. So silly."

My scalp prickles again, just as it did when I saw the words in the curb. "*Loma de Viento*. What does that mean?" I ask, in a voice thin and quavery.

Roddy snorts. "It was a bad day indeed when they discontinued the Latin requirement." He emphasizes his words with the barrel of the pistol.

"For heaven's sake, watch where you point that thing," says Lavinia. She turns to me. "Loosely translated, it means Windy Hill, my dear."

In a daze, I watch them put my bed back together. Everyone agrees the question of how it happened is better left for the morning. When Tony and the Desmonds have gone back to their own rooms, Fairfax takes me by the shoulders. "It was the dream, wasn't it?"

I nod.

"Have you ever thought . . . you know, there are people who can move things with their minds. I don't even know what they call it. Psychosomething." She leans toward me. There are fine lines of tension in her forehead. "Electra, I'm afraid for you. You've got to do something about this. Talk to someone. *Please*."

I struggle to keep my balance on the wire between laughter and tears. "Whom can I talk to? Just tell me. Who knows how to stop the wind?"

"I'm trying to tell you it's not the wind! It's something inside you."

"And I'm trying to tell you it is the wind. Crazy as it sounds, it is *the wind*."

She lets go of my shoulders and heaves a sigh, one I have heard often before, the one that says, *All right for now, but this isn't settled yet*. "The least you can do is let me stay with you," she says. "I don't think you should be alone tonight."

So we climb into bed together, as we often did when we were little girls. With my head next to hers, I float on the surface of exhausted sleep,

thinking about our address. Loma de Viento: 713 Windy Hill. The rational part of me assures the irrational part that it's just a coincidence, that predetermination is an outmoded notion, that nothing from my dark, unknown past has manipulated me into moving to a part of town where there are "freak winds."

These thoughts lead to others, about the man in my dream. I know where the words of the nightmare response came from now. I can almost relive the incident, moment by moment. It is a foggy day on the orphanage playground. I am six years old. I see a man on the other side of the chain link fence. He is hunched into a big, dark coat. He has a fisherman's cap with a bill on it, and a lovely, wild beard. I wander toward him, fascinated. He looks so flat and unreal in the fog. He calls my name. His breath is strong and sour. His voice is strange — husky and broken and wet. He is crying. He whispers the words. "My days are swifter than a weaver's shuttle, and are spent without hope. O remember that my life is wind." Then he half-runs, half-stumbles, away into the mist.

Now the dream has brought to mind other forgotten incidents, other times when I have noticed a strange man in a dark coat and a fisherman's cap. Six, seven, a dozen times perhaps. Interspersed throughout my life. The same old seaman watching me, almost always from a distance.

When I wake up the next morning, Fairfax has already slipped away. I hear her practicing the cello in her room down the hall, making a lot of mistakes. She replays the same passages again and again, loudly and impatiently. The day is clear and still, and the sun pours through my window while I pick up rumpled papers, rehang pictures, and replace my battered belongings in their usual cluttered order. There is no permanent damage. Everything looks just as it did before — perhaps a little less dusty.

At breakfast I dutifully chew and swallow, chew and swallow, and assure everyone that everything is all right. Roddy embarks on a detailed story about the big storm of '58, which uprooted trees, snapped power lines, and left half the houses on Loma de Viento without roofs. Not number 713, he assures us, smiling and stabbing at the yolk of his fried egg. There's not another house in Las Piedras as well built as number 713.

That afternoon we gather for tea in Roddy's study, my favorite of all the rooms. Its walls look as if they are made of books. A single leaded-glass window and a stone fireplace peek out from among the gold titles and

leather bindings. A threadbare oriental carpet, mostly red, covers the floor. We mill about among the overstuffed chairs, sipping Earl Grey and lapsang Souchong. Roddy munches gingersnaps and lectures Fairfax on the origins of her name. Nobody says anything about the wind.

"Such a happy quirk of fate," he says. "The name Fairfax comes from the Old English fyrfeax, meaning 'fire-haired.'"

A little smile drifts across her face, for the first time today. Fate, of course, had nothing to do with her name, not in the usual way, at least. At Our Lady of the Harbor, Sister Jude, the Mother Superior, had the duty of naming foundlings. When she was not at prayers or locked away in her office, she spent her time poring over copies of *Beowulf* or the tales of Alfred the King. At Vespers we used to whisper jokes about her. "Sister Jude speaks Old English like a native. Pass it on." "Grendel is Sister Jude's boyfriend. Pass it on."

Roddy turns to me with animation. "You've an interesting name, too," he says.

"What — Thorpe?" I don't know anything about my surname except that Sister Jude chose it, probably on one of her less energetic days. I have always imagined her closing her eyes and pointing, by accident, to the name "Thorpe" in an open phone book.

"Well . . . Thorpe's interesting, but only vaguely. Comes from *thearf*, meaning need or distress."

How appropriate for an infant found in the dark on an orphanage stair, with nothing between her skin and the fog but a sailor's tattered pea coat. Maybe I have sold Sister Jude short all these years.

"No, I was thinking more along the lines of Electra," says Roddy. "Now there's a truly fascinating name, don't you agree? I would guess it figures somehow in your family history."

I take a long swallow of hot tea. It seems to go down my throat in an irregular lump. The Desmonds don't know yet about my background, or Fairfax's. I wish I could tell Roddy that I am named after my maternal grandmother, or a special friend of the family. But the truth is I am called Electra only because that is the name the nuns found scribbled on a bit of soiled canvas in the pocket of my coat blanket.

"There's not much of a history in my family," I reply, hoping Roddy will become discouraged and move on to some other subject.

But his eyes are bright, and he will not swerve. "Outside the obvious

places, the myths and Freud's books and such, I've come across the name only once before. Quite a story. There was an old ship, the *Electra*, used to sail up and down the coast around San Francisco. She was an antique — a barkentine — built to carry cargo, I suppose, but they'd redone her for passengers. Sort of a tourist attraction. She was a lovely sight heading through the Golden Gate. Quite pretty. Doesn't matter if she was old. A lot of old things are pretty." He winks at Lavinia.

Suddenly the tea is swirling around inside me. It's too hot in the study. I glance toward the window. Maybe I can open it.

Roddy puffs at his pipe. Clouds of sweet-smelling smoke billow in the sunlight. "Quite an amazing story. She got caught in a terrible storm out near the Farallons, and actually went to the bottom. November, it was. Must be twenty years ago. Let's see. I believe it was the year Sartre declined the Nobel." He studies the ceiling as he works a mental sum. "So it's actually twenty-one years ago now."

He shakes his head. "They should never have had a ship like that out so late in the season. That's what everybody said. Could have been a real disaster, but against all odds — almost *incredible* odds, I might even say — the captain got the passengers and crew into lifeboats and saved them all. All but one, that is. A newborn baby. Quite a heroic story. You can imagine what a field day the newspapers had."

A ship with my name, sunk the month I was born, the only fatality a newborn baby. Just a string of coincidences. That's all. A string of coincidences. I repeat the words, but they are empty.

I don't feel very well. My cup slips from my hand. I hear it break as it hits the edge of the table, a distant sound, like the tinkle of wind chimes.

I wobble across the room and unlatch the window. Before I can even push it open, a brutal gust of wind tears it from my hands and flings it out on its hinges. The window smashes against the rock wall of the house. Terror roars down my spine in an icy wave.

The carpet has turned into a roiling ocean. I see the ship, masts splintered, sails hanging in rags, wind driving the rain in horizontal sheets. Rain. The air seems full of it. From this wall of black water, Sister Jude emerges, holding out something rectangular and white. But the wind steals my breath, whirls me around like a leaf, and whatever it is she offers me I can't seem to reach it.

"The window's broken!" Fairfax cries.

Dimly, I sense that someone has a strong grip on my arm. I think it is Tony. Or is it the wind? Or is it both of them?

Then the world degenerates into noise. The wind howls. *A bargain is a bargain, part and parcel.* Beneath that, there is an undercurrent of thuds and crashes, paper tearing and fluttering, the further shattering of glass, and Fairfax screaming my name over and over again.

Then the dream closes in around me, and nothing else seems real.

It's a very long time before I can get the order of the words right. "My days shuttle past, windy life without hope, oh remember I am a weaver. . . ." Thousands of possibilities, none of them right, till finally one concatenation slips into the darkness like a key into a keyhole, and I wake up, gasping.

I am lying on my bed, a heavy wool blanket thrown over me. Fairfax dozes on the window seat, her head nodding forward. Tony sits beside me, reading a thick green book, *Paranormal Psychological Phenomena*. It has library reference numbers printed on the spine. There's a purplish bruise beneath one of his eyes, and a Band-Aid stuck in his hair.

"What happened to you?" I say.

He looks up, startled at first; then his dimples appear and his cheeks turn red. "Oh, nothing," he says. "Hey, Fairfax. She's awake."

Fairfax snaps upright, her eyes full of sleepy confusion. Through the window behind her, I can see it's dark outside. I hear the distant braying of the foghorn on Las Piedras Point. The house has a peculiar, muffled feeling about it, as if it were wrapped in cotton.

"How long have I been asleep?" I ask.

"Hours," says Fairfax. "Do you remember what happened?"

"No. It was noisy. I opened the window. I've been dreaming, haven't I?"

"It was more than a dream," says Tony. "The library's a shambles. Roddy and Lavinia are still downstairs putting books away and sweeping up glass."

I imagine Lavinia's china teacups pounded to shards, the beautiful leather books lying bent and torn on the oriental carpet, and kindly, whimsical old Roddy picking each one up and dusting it off like an injured child. What have they done to deserve this?

I sit up and test my feet against the floor. I feel as if I'd been beaten with a board. "I'm going to the orphanage," I say. "I've got to talk to Sister

Jude." But when I try to stand up, my knees buckle and I fall back onto the bed.

"Take it easy," says Tony. "Here. You've been tossing and turning so much your pillow's like a rock. Let me fluff it up for you." He bats at the pillow clumsily, his worried gaze never leaving my face. "Fairfax told me all about this orphanage of yours. One thing's for sure. It's too far to go in the fog."

Fairfax rises abruptly, hands clenched, thumbs inside her fists. "Electra, there's a professor in the psychology department who's interested in problems like yours. I think we should go see him. The orphanage can wait till tomorrow."

I take a long breath. I remember how we used to argue about the difference between that which is incomprehensible and that which is impossible. I could never make her believe in the square roots of negative numbers, or in infinities, or even in the empty set. "Even nothing is something," she would say. Perhaps the notion of wind as a conscious entity is just as difficult.

"I don't need a psychologist, Fairfax. I need to see Sister Jude."

"How the hell do you know?" She is trembling, and the veins in her neck stand out. "Do you realize that Tony almost got killed this afternoon shielding you from flying glass and books? And here you are, blabbering about going to see some half-witted nun who's so far away from the real world that she probably doesn't even care what year it is. You know, there are other people's lives in danger here! It's not just you anymore." She almost screams the last sentence.

By the time she finishes, I am trembling, too, and working my fists around inside my pockets to keep from lashing out at her.

Tony touches my arm. "Look, Electra. I don't know anything about parapsychology." He gestures toward the thick green book with the library numbers. "I'm not sure I even believe in it. But I *am* a scholar. And I do know that when you've got a specific problem, the best way to start on a solution is to track down every lead you can find — even the wildest. Maybe Fairfax is right. Maybe this guy can help you figure out what's going on. How will you ever know if you don't go see him?"

Track down every lead, even the wildest. I almost smile at the irony of Tony's words. I look out the window at the gray wall of fog. Somewhere beyond it, beating the waves into the foam, whistling among the offshore

rocks, the wind is waiting for me. The marrow of my bones is cold with eerie certainty that the wind means to kill anyone who tries to keep it from getting what it wants. There is no time left for pride.

I sit up very straight. "Take me to the orphanage. Just take me up there, and I promise I'll go see the psychologist tomorrow."

Fairfax sticks her jaw out. "What can anybody at Our Lady of the Harbor possibly do that a psychologist can't do better?"

"They can tell me about my past."

Fairfax swallows, and is silent.

Roddy and Lavinia watch from the porch as we slide into the front seat of Tony's car. "Won't you reconsider? It's a terrible night for driving," says Lavinia.

Roddy rubs her gently on the back and waves to us. "Be very careful," he says.

Tony calls out across the misty yard, "Don't worry. We'll be home before you know it." Then he turns the key in the ignition.

"Sorry," he says as the engine rumbles to life. "The top has been stuck in the down position ever since I bought it. I haven't had time to fix it yet." He flicks the heater switch to high.

It's not far to San Francisco. On a clear day it takes only thirty or forty minutes to get there. But tonight is different. The fog is so thick it even diffuses the dashboard lights. For all I can tell, we are sitting in a parked car with a fan blowing on our faces. Tony assures me we are moving at a steady twenty miles per hour. I don't know whether to curse the fog for slowing us down, or to pray that it won't disappear. It is an omen. A signal. As long as it surrounds us, I know the wind is far away.

It is almost 10:30 when we reach Our Lady of the Harbor. Adobe walls loom out of the night, full of dark windows. The hour of the Compline is long past, but the Little Sisters of Saint Camillus never turn away visitors in need. There is always someone on duty. Tony and Fairfax and I huddle before the massive door and ring the night bell.

We wait a moment, listening for footsteps, hearing only the creak of moorings on the nearby wharf. I wonder how many nights, as a child, I lay in my bed and listened to this very sound.

It seems hours before a voice comes from behind the tiny, barred door-window. "Who rings our bell?"

"Electra Thorpe, Mary Fairfax, and a friend," I say.

"Electra? Mary Fairfax?" Bolts are shot back, the door thrown open, and there stands Sister Michael. A smile creeps across her pale abstracted face. We have probably pulled her from some private prayer. She hugs us and draws us through the vestibule toward the library. "You look so cold, poor dears. But how wonderful to see you! Come, come. I have a fire lit. I was just reading Saint Augustine. Are you familiar with him?"

Tony laughs softly. "Philosophy 101. He tried to prove that good is more powerful than evil."

"Yes. And he succeeded. At least as far as the Church was concerned," says Sister Michael. She smiles at him with sudden warmth and a curious tilt of her head.

Fairfax flounces into a patched and worn chair near the fire. She's so cold her lips are blue, and it takes her a moment to work her face into a sarcastic grin. "See, Electra? You have nothing to worry about. Good will eventually triumphs."

"What do you mean, my child?" says Sister Michael.

Fairfax crosses her arms and slouches deeper into the chair. "Ask them."

Sister Michael raises inquiring eyes toward me, face half shadowed by her brown wimple.

I meet her gaze steadily, as I have done few times in my life. "I'm sorry, Sister. There's no time to explain. I've come to see Sister Jude. It's urgent."

She looks at me quizzically. "What an odd coincidence. She's been looking for you."

I try to swallow the dryness in my throat. "I didn't realize."

She nods. "Sister Jude is ill. She had a mild stroke last month, you know. Unless it's extremely important, I'd rather not wake her. I could take your address and phone number. . . ."

Panic spurts through me. "A stroke? Will she be all right? It's not serious, is it?"

"There's no real need to worry. She was in the hospital for only a few days, but it slowed her down. You know how these things go."

"I understand, but . . . please. I . . . please. It is important."

She contemplates me for a moment, touching the tips of her fingers together, moving them apart, touching them together again. I wonder what she sees in my face. I wonder if the fear moves under the skin of

my cheeks in visible waves. She nods once more. But this time she rises and walks toward the door. "Wait here," she says.

She is gone a long time. We sit in silence, listening to the clock on the mantel. It's an expensive one — an antique, probably a gift from some successful parishioner. Its intricate workings click away in plain view beneath a glass bell. I remember the stream of gifts that used to come through the orphanage door every Christmas. Half a dozen lovely trees. Cases of wine and olive oil, and wheels of cheese. Boxes of nuts and dried fruit.

The clock strikes eleven, and we hear the shuffle of slippers on the stone floor. "Here we are," says Sister Michael as she guides Sister Jude into the room.

Sister Jude has always been old, but now she looks truly ancient. Her spine is bent. She watches her feet with great concentration as she hobbles along, leaning on a knobby black cane. She is wearing a frayed brown bathrobe. Silver hair peeks out from under her wimple.

When she is settled in one of the chairs by the fire, she tilts her head up with an effort. A smile whispers across her face. "Greetings, Electra. Have you come to join us after all?"

I look down at the floor. My cheeks burn.

"How did you know I've been thinking of you?" Her left eyelid droops, dead and unmoving, but her right eye shines in the glow of the fire.

"I had a dream," I say. "In the dream, you wanted to give me something."

Sister Michael makes a small sound — almost a whimper — and presses her fist to her mouth. She sways slightly, and Tony reaches out to steady her.

"What's wrong?" I ask. "Are you all right?"

The good half of Sister Jude's face tightens into a look of vague and lopsided pain. "Perhaps we have witnessed a miracle," she says. "I tried to contact you, but the university has no record of your current address. I prayed that God would send you here." A soft, dry laugh whispers from her throat. "I have spent my life believing that the age of miracles was past."

She reaches into the folds of her robe and pulls out a white envelope, torn open along the top. She hands it to me. "Forgive me for opening it. It was marked urgent, and when I couldn't reach you. . . ."

I turn it over and over, struggling against a rush of *déjà vu*. I read the front. *Electra, c/o Little Sisters of Saint Camillus, Home for Children,*

San Francisco, California. It's the kind of envelope you can buy in any drugstore, ten for a dollar. The return address says *Jimmy's Tavern, Mission Street, San Francisco.* The word *urgent* runs in capital letters along the bottom edge. The writing is shaky but clear.

Inside the envelope is a sheet of binder paper, buckled as if it has gotten wet somehow.

"Dear Electra," it says. "Time is getting short by now. Nearly your twenty-first birthday, and that was the bargain. I've got no right to ask you favors. But it chews at my soul, what I did, and I can't go to my grave without telling you. If God has any mercy, you'll find me at Jimmy's in the Mission. Any night this week. Ask for Captain Fletcher."

The paper flutters out of my hand.

"What does it say?" Fairfax springs from her chair and snatches the letter from the floor. Tony reads over her shoulder.

"What's the postmark?" he says. "When was it mailed?"

I am still holding the envelope, forgotten, between the fingers of my left hand. Tony takes it from me, glances at the stamp, then at his watch. "This is dated Monday, October 13. Today's the fifteenth — almost sixteenth. He'll still be there." He looks up at me. There are lines in his face I have never seen before. "Who is this guy, anyway?"

I try to make some answer, but I can't think of any. My chin is quivering, and the only communication I manage is a shrug.

"I'll bet he's her father, the son of a bitch!" says Fairfax. "How could he be so cruel?"

"Why is that cruel, Mary?" says Sister Jude. "If he is her father, it is not cruelty that makes him write this letter. It is only human nature, and one of the better parts at that."

I kneel down beside Sister Jude's chair. "Please," I say. "What do you know about me? About him? About that night, the night they found me here?"

She smiles. I remember that smile, surprisingly small for all the love it contains. She strokes my hair. Her hand is rough and bony. "I'm sorry, Electra. There is little to tell about you — about any of our children."

"There must be something. *Something.*"

She lifts her chin just slightly, and the creases in her forehead deepen. In my mind an image of her appears, a small brown figure gazing up at mountains of dust, each speck of dust a memory. I have never felt as minuscule as I do at this moment.

"I remember the way we named you," she says. "You were wrapped in a seaman's coat, and in it we found a scrap of sailcloth. 'Electra,' it said. We believe you were named after a ship. A ship that sank. Did you know that?"

I shake my head. I wonder how fast the hearts of mice beat, or hummingbirds. No faster than mine.

"Well. It seemed so fitting. The *Electra* sank just before you came, and a child aboard her was killed. We thought of you as a living memorial to that child's soul."

I rest my throbbing forehead against the arm of the chair. The wood feels cool and good.

"You arrived in November. During the storm in which the ship was lost."

"My birthday is November 17. It must have been after that."

"No . . . no, we celebrate a foundling's birthday on the anniversary of his arrival. So although you came to us in the middle of November, your real birthday must have been well before that. As much as a month, I'm sure." She smiles distantly. "I have never seen a baby before or since whose eyes were so bright. The world fascinated you."

I barely hear the last part. I'm busy developing several meticulous proofs. They all conclude the same way. If Sister Jude is right, I'm a month older than I thought. My twenty-first birthday might be today, or yesterday, or tomorrow, instead of next month.

"Sister Jude, do you have any idea who wrote this letter?" says Tony.

She shakes her head. "None. As Fairfax says, her father, perhaps."

Slowly, a thought has been percolating its way up through my subconscious. Now it flows into place among all the other thoughts. "He's the man in the fog," I say. "The sailor outside the playground fence. I'm certain of it. I've got to find him. The sooner the better."

"What man in the fog?" says Fairfax.

"A man I saw when I was a little girl. I dreamed about him the night of the eclipse. And now I remember seeing him more than once. Watching. Just watching."

Tony turns toward me, his face oddly soft in the firelight. "Electra, you know there are some pretty crazy people hanging around the Mission district. Why don't you let me find him for you, talk to him, make sure he's not planning to . . . to hurt you somehow."

I lay my hand on his shoulder, touching him for the first time, thinking about it only after I have done it. Even through his shirt and his tattered sweater, he feels warm. Maybe it's just that my hands are so cold. "Thank you. But I don't think there's time." I almost whisper it.

Fairfax takes two steps toward me, stops, clenches her fists. "Don't go, Electra. I'm afraid. This feels all wrong."

I smile at her. I can feel it on the inside of my face, like the heat of a tiny flame against a wall. "You know how it is, Fairfax. I know you do. He can tell me who I am."

She never cries. Not even now. But her eyes are very bright as she nods slowly.

I take Sister Jude's hands between my own. I have known her all my life, and now I am leaving. What can I say that will not be inadequate?

But she speaks before I can. "I think you'll be back," she says.

My throat is so tight I can barely answer. "I will if I can. I promise."

She gazes at me with her one piercing eye. "Take my crucifix," she says, leaning forward so I can unfasten the chain around her neck. Her voice is full of hard, icy, authority, the kind no one denies.

"Yes, Sister," I say automatically, as I have countless times before, when the lessons and commands were not as important as now. I reach out and release the catch. The crucifix is small, made of dark wood, hand-carved with intricate designs. I fasten the chain around my own neck.

"There is a line in the poem *The Wanderer*," she says. "*Til bith he-the his treowe ye-healdeth.*" It means, "Good is he who keeps his pledges."

I nod, scrubbing my eyes on the sleeve of my coat, and Tony and Fairfax and I walk away toward the heavy door and the fog beyond it. The clock strikes twelve.

"I will if I can," I murmur.

I COUNT THE streetlamps as we start down Mission Street. Three, five, seven. In the fog, which seems thinner now, they begin as nebulous clouds of light, and grow to bright spheres with halos. I see fewer and fewer of them as we get farther east, closer to the piers where the big ships tie up. Twenty-one. I turn the number over in my mind, wondering what makes it so special. Not a prime. Not a square. Three sevens. Three for the Trinity, seven because it is magic, and has been magic since time began.

Jimmy's is a single-story dive on a deserted corner. Above the grimy front window, a neon sign blinks on and off, first a naked pink woman, then a green palm tree. We don't even have to look for a parking spot.

Tony presses his palm lightly against the cracked plastic doorplate, then looks at me worriedly.

Fairfax clutches my sleeve and says, "Are you sure about this?"

The faintest whisper of a breeze tickles my cheeks. The fog is lifting. "Hurry," I say.

Tony pushes through the doorway into the darkness of the tavern. At first I can't see anything. The smell of stale beer and rum is so powerful that it makes my stomach squirm. There's a jukebox playing softly, something nondescript, a female vocalist singing about how she can't get along without love. I hear Tony trip over something — probably a wooden stool — as he makes his way up to the bar.

There are candles in round red glasses on each table. By their meager light, I can just make out the bartender, a huge man, wiping a mug with his white apron. "Wadya want?" he says.

"We're looking for someone named Captain Fletcher," says Tony. "He said we could find him here."

The bartender snorts and inclines his head toward the back of the room.

We make our way among the rickety tables where scattered patrons drink alone or in pairs. In an isolated corner, far from the door, a wild-haired figure sits hunched over a shot glass and a pint bottle of whiskey.

"Captain Fletcher?" says Tony.

"Who the hell are you?" says the man, wrapping his arms about his bottle as if to protect it.

"I've brought Electra."

There's a sound of indrawn breath, then a sigh, almost a sob. "Figured she'd be gone by now," he says.

I push a chair out of the way and sit down opposite him. I stare at his face, trying to match it with the face outside the playground fence. There are too many wrinkles, and not enough light. All I get is an eerie sense of the familiar, without being able to pinpoint it.

I take a deep breath. There's a simple test that will settle the matter. "My days are swifter than a weaver's shuttle," I say, "and are spent without hope."

In the glow of the red candle, tears spill over his cheeks, and he hides his face with his arms. He moans softly. "O remember that my life is wind: mine eye shall no more see good."

"What does it mean?" I whisper. "I've been dreaming it for months."

He gazes at me miserably. "Sweet Christ. In the past twenty-one years, I've nearly memorized the whole damn Book of Job. That's where it's from, if you want to know. They might as well have written it for me. God only knows how many times I've asked Him to either kill me or forgive me and be done with it."

"Forgive you for what?" says Fairfax, leaning toward him, teeth bared as if she would like to grab him by the collar and shake him till his neck broke. "You've done something to Electra, haven't you! Is that what needs forgiving?"

Tony pulls her away. She jerks herself from his grip and stands trembling beside me, glaring at the old seaman.

Captain Fletcher throws back his head and laughs. "I've done something to Electra? That's a good one. Which Electra? There are far too many in this piss hole of a world."

Suddenly I notice a small sound, barely audible except to one who is listening for it — a breeze gently scrabbling at the window of Jimmy's Tavern. My mouth goes dry.

"Are you my father?"

He's still laughing, almost helplessly, at some joke nobody else can see. "Your father?" he says. "If I were your father, this would all have been much simpler, wouldn't it, now?"

I realize I've been holding my breath. I let it out now, embarrassed at the relief I feel. My father is a better man than Fletcher. I can still dream of that.

"You said if God had any mercy, I'd find you. Well, I have," I say. "And I want to know what you meant about bargains, and time getting short."

His laughter stops as abruptly as it started, and his eyes cloud up. He's full of booze, I tell myself. A soppy, pitiful drunk. I try not to despise him for his weakness. Whatever he's done, he hates himself for it. That should be enough.

"Twenty-one years ago I was the captain of a ship," he says. "A ship named *Electra*. A fine, stinking ship that went to the bottom in a storm. Nobody died. Not a soul! You want to know why? Because I made a bargain with the wind."

I sit at the table, frozen, as the story of my beginnings comes out at last.

"I took you from your mother's arms. In the confusion, your parents never knew what happened. I told them you were washed overboard, but I hid you in the bow of a lifeboat, underneath a sail bag. And I used you to buy our lives. Used you for a bargaining chip. Every sailor knows. The wind is always interested if there's a soul involved. Especially a child's soul. Something new and pretty it can gloat over."

For a long moment, while it all soaks in, nobody speaks. Then Fairfax leans across the table and says, in a voice too thin to be convincing, "That's a lot of bull."

Tony, his face tight, scrutinizes Captain Fletcher. "I don't believe you. If you're telling the truth, why didn't the wind take her then, on the spot? Why wait until now?"

The captain flashes him a crazy grin. "Wind can't take a person's soul against his will. Or so the story goes. It's a matter that can't be decided till the age of majority."

"You mean all Electra has to do is say, 'No, you can't have me?'" says Tony, his voice breaking with anger and incredulity.

The captain shrugs and starts to lift his bottle. Tony reaches out and stops him.

"You're making all this up, right? I mean, what kind of bargain is that?"

The captain answers softly. "What do you take me for? Listen for yourself. Does that sound like an old man's imagination?"

Tony turns his head, just slightly. He hears it, too — the wind again, more insistent this time, whistling at the keyhole, curling around the garish sign outside, making it tap against the bricks.

"It made me promise she'd be brought up right — kept clean and perfect till the time. That's why I gave her to the nuns," says Fletcher, his dazed eyes focused on something far away, something none of us can see. "The wind has its ways of stacking the deck. Just like anybody else. It's been sniffing around her all along, whispering about how she should like some things and hate others, trying to persuade her she's got nothing to lose. But that's not the worst of it."

He lifts his bottle with shaking hands and takes a long pull. This time, Tony makes no move to stop him. "What do you think will happen to me if she says no? What do you think will happen to you and everybody else

she gives a damn about? Ask her. I'm sure she knows by now." He shakes his head. "You can't imagine the kinds of death the wind can think up for a man, even if you've seen them with your own eyes."

Fairfax is on her feet, flailing at the air while Tony holds her back. "You son of a bitch! What gave you the right to gamble away somebody else's soul? Your soul. It should have been *your* soul!"

"My soul? You stinking brat. You don't know much about bargains, do you? Why should the wind take mutton when it can have lamb instead?" This time when he laughs, it fills the whole room, a horrible, deranged hooting sound, almost a cry of pain. When it's over, he wipes spittle on his sleeve and takes another long drink. "And as for what gave me the right, it was numbers. Simple, stinking numbers." He winks at me as if we are members of the same conspiracy. "You know all about numbers, don't you, my girl. Think you love 'em, eh? Think you know all about them. Well, look what they've done to *me*!"

I push back my chair, rise from it unsteadily, too numb to feel the floor beneath my feet. "What do you mean?"

"I mean it's all in the numbers. A hundred and twenty-nine to one. A hundred and twenty-nine men, women, and children, sunk to Davy Jones. Or one baby girl . . . one baby girl. . . ."

I back away, tipping over chairs, bumping into tables.

Outside, the wind has risen to a shriek. The walls shake. The windows rattle in their frames.

"It's a lie!" Fairfax screams. "Everything he said is a lie!"

How I wish I could believe her.

The other patrons, mostly sailors themselves, have begun to rise from their tables and grope toward the walls with the edgy jerkiness of men on the verge of panic. The bartender glances up at the ceiling, raises an arm to shield his head from bits of falling plaster, then whirls toward me and shouts, "You! Get outa my bar!"

"Stop!" says Tony. "Don't go any closer to the door." And he plows through the clutter of tables and chairs to seize me by the wrist.

I am lost in a wasteland of fears and confusions. I want to live. I want to find my mother and father. I want to feel what it's like to be someone with an inherited past, long and complicated and rich. It isn't fair. It isn't fair.

At the same time I think of the way I used to look up at the stars and wonder why I was different — an introvert, cold and frightened at a man's

touch, ecstatic only at the laws of mathematics. I held the hope of change inside me like a candle in a lamp. Now I see the truth. I am different because my soul has never been my own. Maybe I will never change. Maybe I cannot.

I stare at Tony's fingers curled tight around my wrist, and I cry, "Don't let go of me! Oh God, yes, let go of me!"

"Electra!" His eyes are rimmed with tears. "People care about you. All of us care — Fairfax, Roddy, Lavinia, *me*. You can't just give up. *I love you, Electra!* I won't let you go."

I have only an instant to feel astonished at his words, only an instant to wonder at the way they rekindle the candle in the lamp. Then the front window splinters into a million pieces. Tony's face is suddenly speckled with blood. He closes his eyes tight and staggers backward with a cry of surprise. As if from a great distance, I hear the other customers shouting, screaming. My clothes are plastered flat against my body. The wind is pulling at me, and the inside of my skull vibrates with the message I have come to know by heart: *A bargain is a bargain, part and parcel.*

Fairfax launches herself at me, wraps her arms around one of my legs as the wind drags me toward the door. "Don't go! He said you didn't have to go," she shrieks. The mirror behind the bar bursts outward in a spray of deadly shards.

The pieces of my life hang in the air before me. Bits that have always seemed random before coalesce now into something whole, something with a shape — not elegant or beautiful, but pleasing nonetheless, and powerful somehow. I think of Sister Jude bent over her books, of Fairfax practicing the cello with her eyes closed, of my dusty hats and boxes of pretty buttons, warm days spent on windy beaches, Roddy's suspenders and Lavinia's pomegranate wine, the completeness theorem, Tony Di-Marini, who says he loves me, smiling and sipping cocoa by the light of a lunar eclipse. Every person, every place, every event, speeding toward one point in time: this moment of choice.

I look down at Fairfax, clinging to my ankle, her hair like a mane of flames, streaked with dark blood. Behind her, Tony has fallen to all fours, shaking his head as if to clear it. With a fresh spurt of terror, I understand exactly what the wind wants. It wants me to believe that Captain Fletcher is right. That it's a simple matter of numbers. My life in return for the lives of those I love. But it's not just my life the wind is after. It's my

soul. And if I succumb, it will be worse than death. Much worse.

Tony climbs back to his feet and tackles me like a football player, grabbing frantically for a hold the wind can't break. But slowly, slowly, I feel myself slipping away from him. "Don't let go, Tony, oh God, don't let go!" I scream, and I squeeze my eyes shut. Somehow the darkness magnifies the sting of plaster and bits of glass peppering my skin. But it's better than seeing.

I am already far beyond surprise when, through the blackness and the incredible din, I hear a whisper. "I think you will be back." I almost feel the brush of lips against my ear. The voice is Sister Jude's. In that moment the chaos of the external world recedes, and I think, *Of course. Why didn't I see it before!* And I remember that any equation can be solved in a number of ways, and that often the most elegant paths of solution are the least obvious.

I open my eyes, and the chaos roars in again. I throw up an arm to protect my face, and the words come to me as if I've always known them. I cry into the wind. "Mary, Mother of God, intercede for me. To Our Holy Father I offer my life in service as His bride!"

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The wind stops completely, as if my words have shocked it somehow. But only for the barest instant. Then it rises again with a noise like a freight train, an inhuman howl that makes me clap my hands to my head. The air pressure in the bar changes abruptly. *The roof's caving in*, I find myself thinking calmly. There's a shower of concrete and an oddly inconsequential wash of pain — mental or physical, perhaps both — muffled and diluted by a gradual loss of consciousness.

In our mountain valley the sun is rising. I pause, kneeling at Matins, to look out through the window of the chapel. The peaks above the convent, already touched with copper brilliance, stand out hard-edged against the deep blue sky. The upper reaches of the forest shimmer in a golden halo of light. I like this view, an orderly one, full of God's own formulations. It is far removed from the sea, a good place to make a new start, especially when one is named after a ship.

My hand goes to my neck, and Sister Jude's crucifix, one of the few worldly possessions I brought with me when I came here. I ask for strength. I still can't think of my past without a stab of yearning, as if I have cut myself on a small, sharp jewel that will never wear down with

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time. No one died at Jimmy's Tavern except Captain Fletcher. He, and only he, lost his life when the roof blew in, while the rest of us were spared. All of those I love in that other world remain.

Letters come at intervals. Sister Michael writes that Sister Jude spends her days dozing in the sun. From Roddy and Lavinia I receive news of good books and the condition of the garden. Lavinia never fails to mention the two boxes of small treasures I asked her to keep for me in the moments before I left, unable, though I tried with all my might, to assign them to the trash bin.

Fairfax and Tony write seldom. They are more likely to appear at our door every few months, bearing gifts of pomegranate wine, warm scarves for the snowy winter, or varieties of fresh fruit that we cannot raise ourselves at these elevations. If the day is warm, I walk with them in the woods. If not, we sit together in the public room, where a fire keeps the chill away.

Fairfax talks about her music, which consumes her now as it never did before. On each occasion she has discovered something new — a special technique, the name of an unknown composer, or the fresh interpretation of a particular phrase.

But Tony never talks about his work. Instead, he always asks, the look in his eyes a little less hopeful each time, "Will you ever leave this place?"

And I always reply, "No, Tony. I won't."

It is then that I feel the most pain from the little sharp jewel of yearning, and I push it away, wrap it in the protection of rationality, and seize the truth. This life is right for me. And even if it were not, a bargain is a bargain, part and parcel.

Coming Soon

Next month: The May issue features two new novelets: "The Sin Eater of the Kaw" by Bradley Denton and "Hermes and the Magic Helmet" by Ronald Anthony Cross. Also included will be the report on Competition 47, which was squeezed out of this issue.

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